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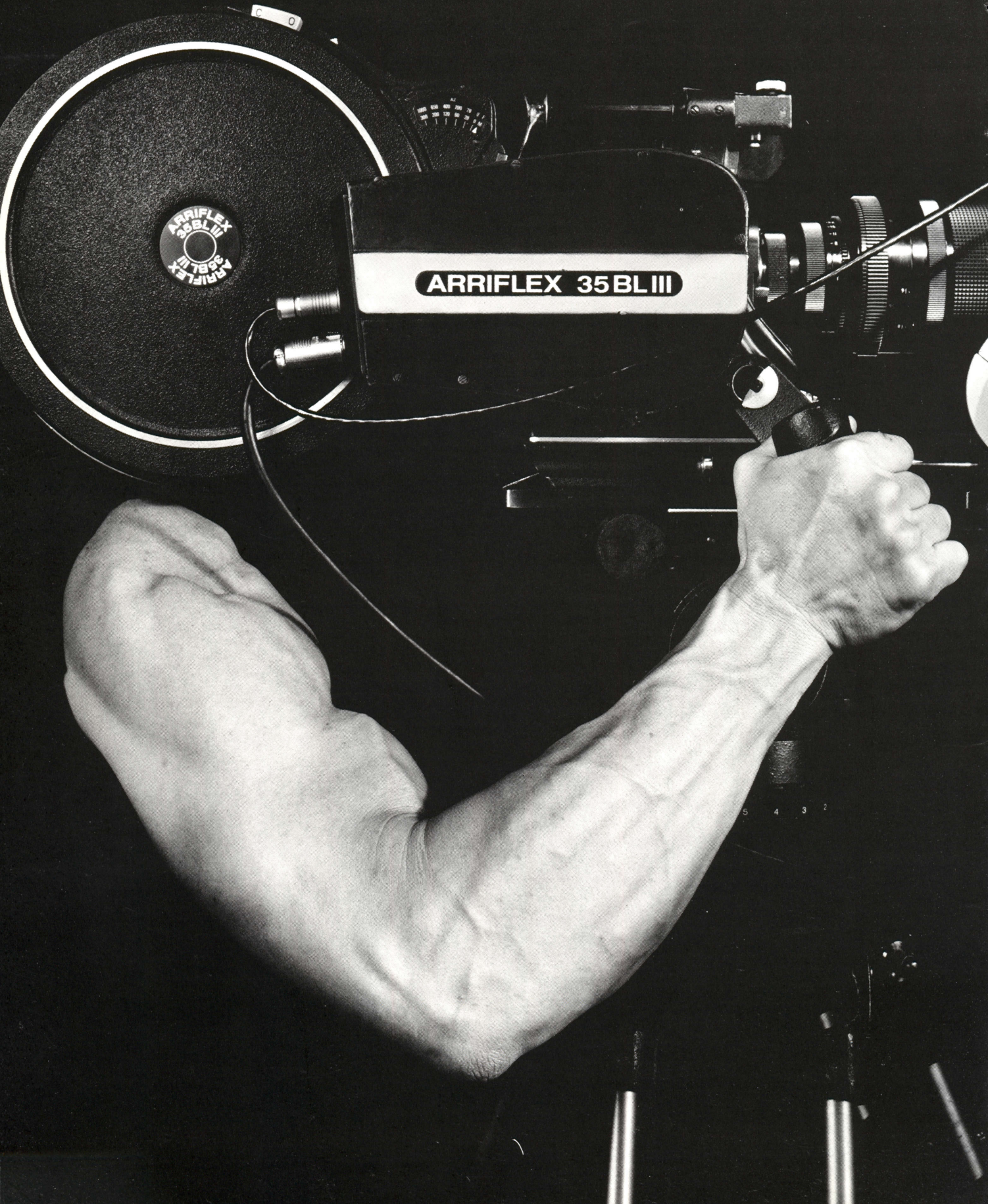


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Louma Crane on *To Live and Die in LA*

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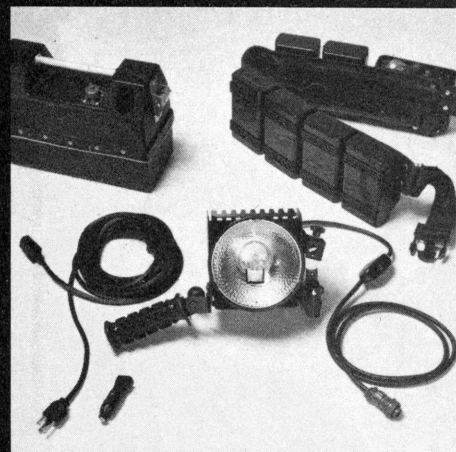
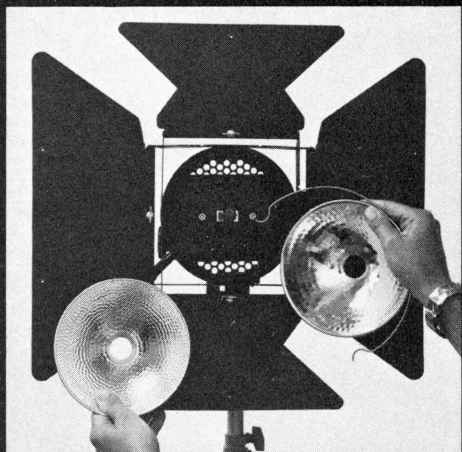
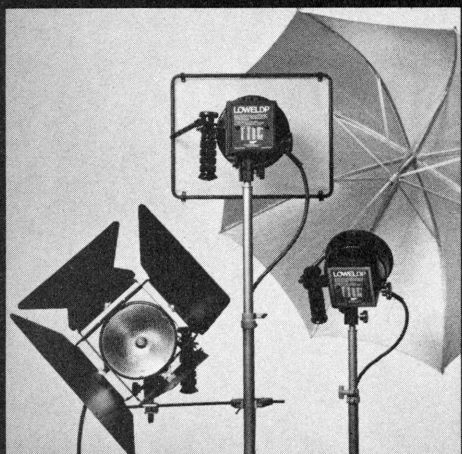
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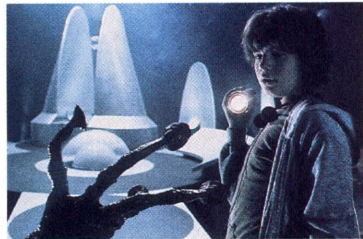
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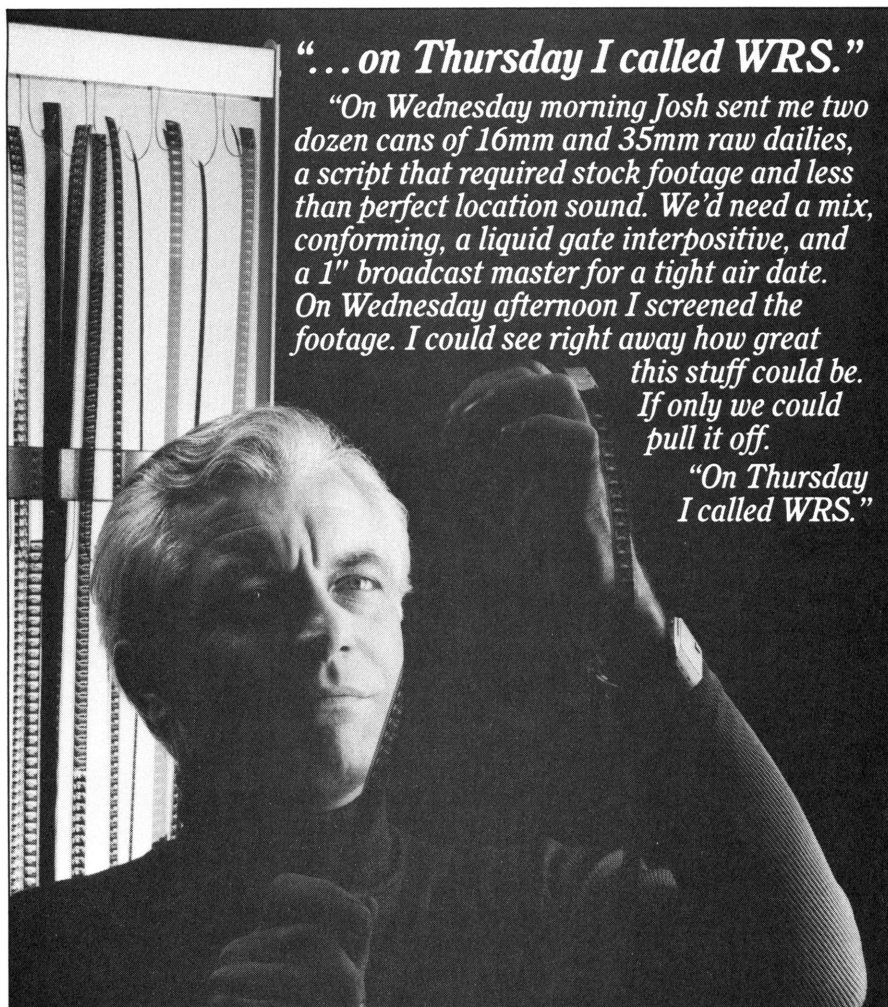


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This composite from
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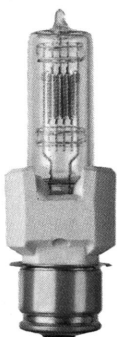
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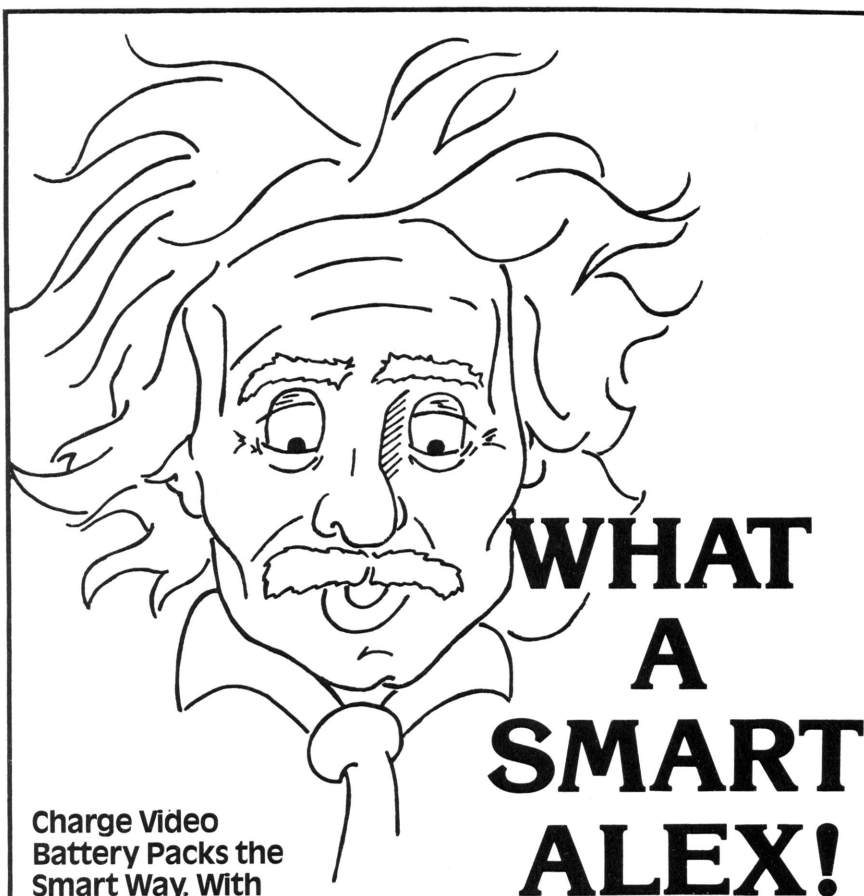
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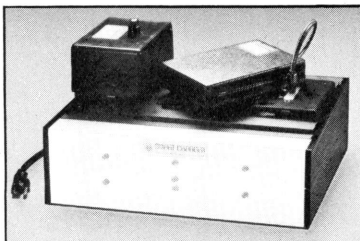
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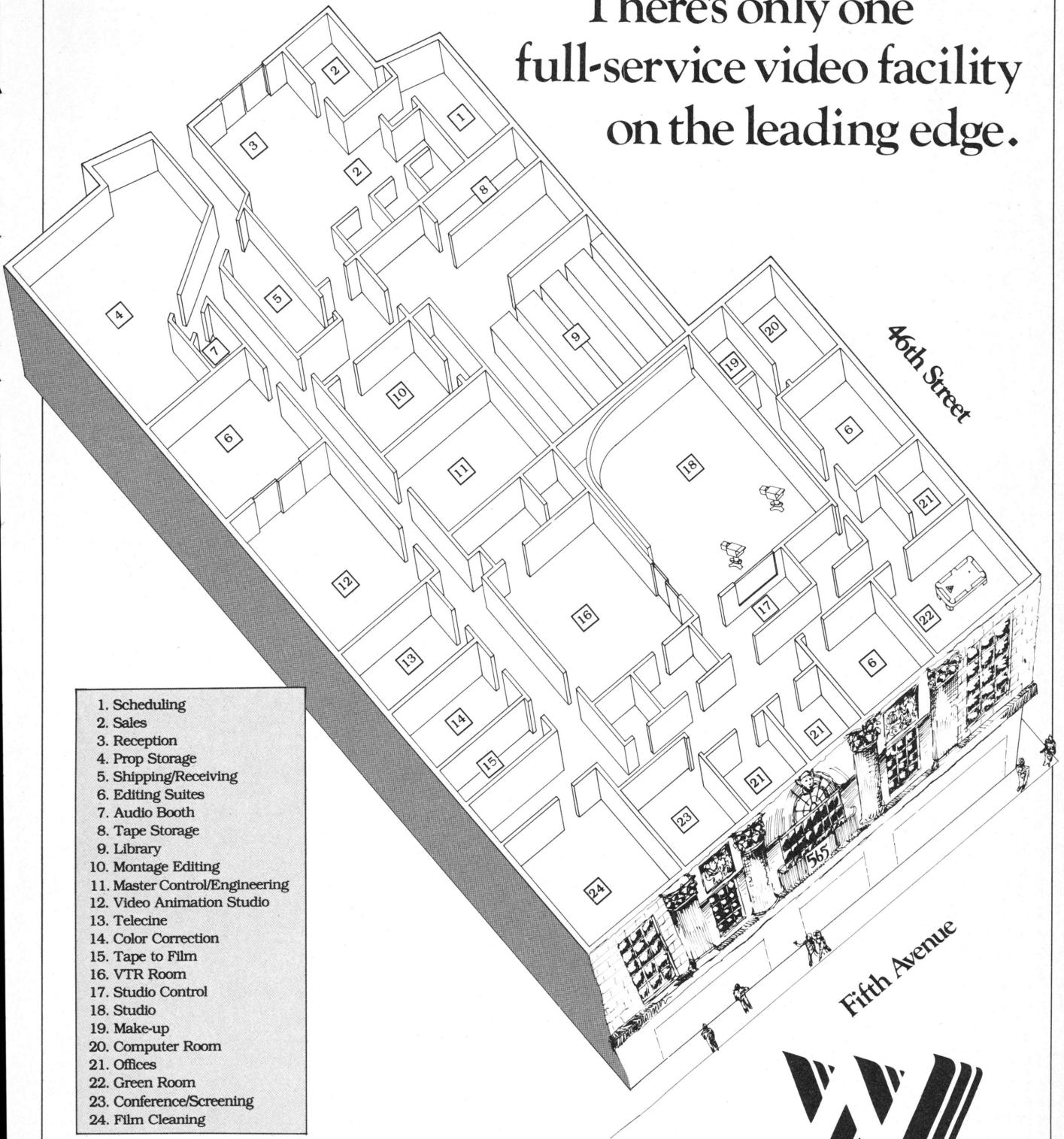
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New Clairmont Super 1.85: 41% more image area. And the TV Safe Action is the same height.

It's not anamorphic, at any stage.
Angle of view widens 19%. The Zeiss T2 14mm
becomes, in effect, a T2 11.3mm.

A foot of rawstock costs about 30 cents. With standard 1.85:1, about 15 cents of that goes for negative you don't use.

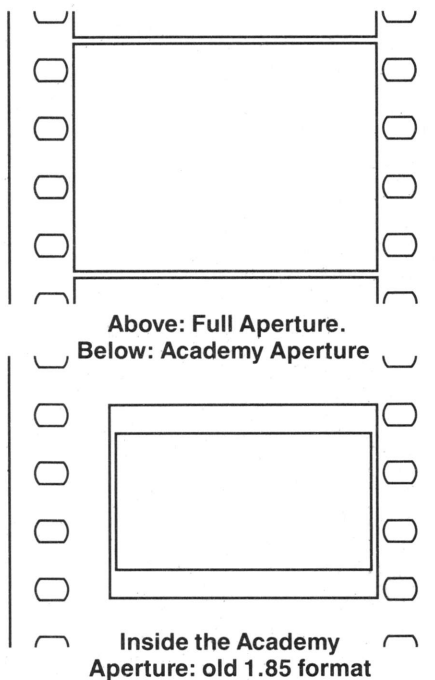
1.85 is obviously a good idea, though. Wide-screen format *without* having to shoot anamorphic. You get to use spherical lenses, which are lighter, faster, sharper, less expensive. You also get to use the *best* lenses in the world, which are Zeiss.

Bigger format, still spherical

What we've done is to make the 1.85 format bigger — 41% bigger than the old 1.85. We moved the optical axis over, centering it on the Full Aperture; and we used the full width available on the film.

All our Zeiss PL lenses cover the larger format. So do the three Cooke zooms — the 20-60mm, the 20-100mm and the 25-250mm T2.8.

Because of the larger negative area, every lens



sees a 19% wider angle of view. A 25mm lens becomes, in effect, a 20.25mm.

Wider angle, no distortion

This makes the wide-angle lenses really interesting. The Zeiss 14mm becomes an 11.3mm. But, of course, there's none of the stretchy edge-distortion inherent in

some extra wide angle designs. It's still a 14mm design; and it's still a Zeiss.

Easier to compose for TV

Cameraman Richard Bowen just finished shooting *Acadian Waltz* in Clairmont Super 1.85. "With the TV cutoff the same height as the 1.85, it really was *much* easier to frame," he says. "That meant I could pay more attention to composing the image and less to worrying about formats."

Does it cost more?

Peanuts. The camera costs \$125 more per week. Developing and dailies cost the same as before. The interpositive becomes a reduction optical (to the old 1.85 format) and costs about 50% more. Inter-negatives and prints: the same as before.

Finer grain at every stage

Interpositive and internegative stock are the

same emulsion. Both are *extremely* fine grain — much finer than the camera original, of course. So the extra image quality you've gained in the camera is still there.

**TV quality:
as good as ever**

For television, you can make a 1-inch tape master from the timed and color-corrected answer print. The answer print is still Full Aperture. The TV Safe Area on Super 1.85 is the same size as on the old 1.85 format.

**Release-print
quality
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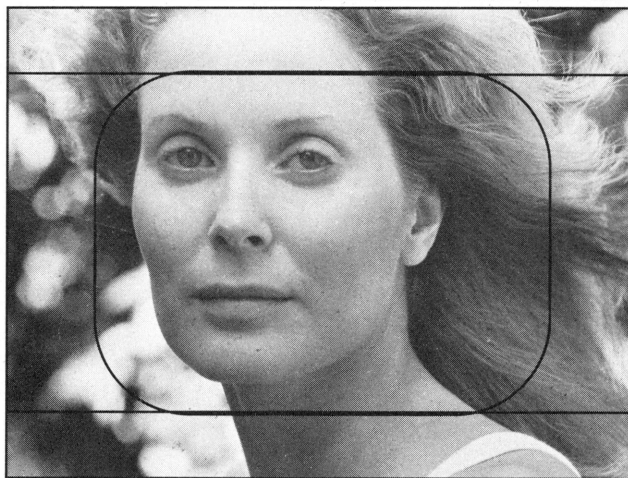
**Why didn't somebody
think of this
before? And who did
think of it?**

Cameraman Jim Dickson, that's who. He came to us with the Super 1.85 idea a few months ago. We made a prototype and he shot the independent feature *Counsellor* with it. We're all in his debt. Thank you, Jim Dickson.



OLD

Above: Academy Aperture with old 1.85 format and TV Safe Action area. Old 1.85:1 measures .825 x .446 inches. Area: .367 square inches. TV Safe Action measures .713 x .535 inches.



NEW

Above: Full Aperture with Super 1.85 format and TV Safe Action area. New 1.85 measures .980 x .529 inches. Area: .518 square inches. TV Safe Action measures .713 x .535 inches.

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Letters

Errors in Quotes

For 20 years I've read your magazine, always looking to learn new ways in our craft. I was alarmed by your article "Photographing *The Killing Fields*" (April, 1985). I am quoted with opinions and ideas that are not mine and things I did not say. For instance, our 5247 and 5293 performed magic—nothing "deteriorated" (Kodak, please note).

I never made "... a film centering on a Harlem based family of Puerto Rican junkies..." I did shoot a documentary called *East 103rd Street*. It was about a very lovable family. Tony died last year from a car accident. Words can't convey how much she meant to me.

I wish I could have gone to Hollywood to participate in the Oscar ceremony. All of us are proud to have had a part in making *The Killing Fields*.

I have great respect for Miroslav Ondricek, whom I was lucky enough to assist on *If*, and respect for all the nominees past and present who have taught me so much by example.

I'll make up for it.

—Chris Menges, BSC
Cartagena, Colombia

Film Preservation

On May 22, it was my privilege to attend a press conference at the American Film Institute announcing the formation of the National Center for Film and Video Preservation. This center represents the first national coalition of archivists and industry leaders from film and video dedicated to the preservation of the moving image.

I was reminded by several of the people on the board of directors for this new venture that the moving image is to our century what newspapers were to past centuries. It is not only a form of entertainment, but a reflection of our

society: our beliefs, our dreams, our memories, our failures and our understanding. The sad fact is that over 50% of the films made before 1950 are irretrievably lost. Most of early television from the 1940s and 50s is lost simply because it was not recorded on any medium. In the late 50s and early 60s video tape came into use but equipment to view those early tapes has almost disappeared. The grim reality is that our film heritage is slipping away.

On this day at their first meeting the new board passed several important resolutions: 1. To establish a computerized data bank of our national film and video resources, 2. To establish committees to determine just what should be saved and/or restored, and 3. A voluntary, limited moratorium on the destruction of all taped or filmed materials. The moratorium would last two years until proper guidelines for restoration and preservation have been established and storage problems have been resolved.

This is the beginning of a decade of preservation. Never has there been a worthier cause for your support. I urge film lovers everywhere to contact the new center in the coming months. Let them know that the task they are undertaking is supported by all kinds of people everywhere.

Cinematographers, please lend not only moral support but continuing financial support. This center will be hard at work protecting and preserving *your work, your artistry*. I know that the American Society of Cinematographers maintains a museum of camera equipment that spans an entire century of motion pictures. Consider this, if there is no film left as a record of what the men and the machinery accomplished, then your museum is no more than a display of fine old paintbrushes.

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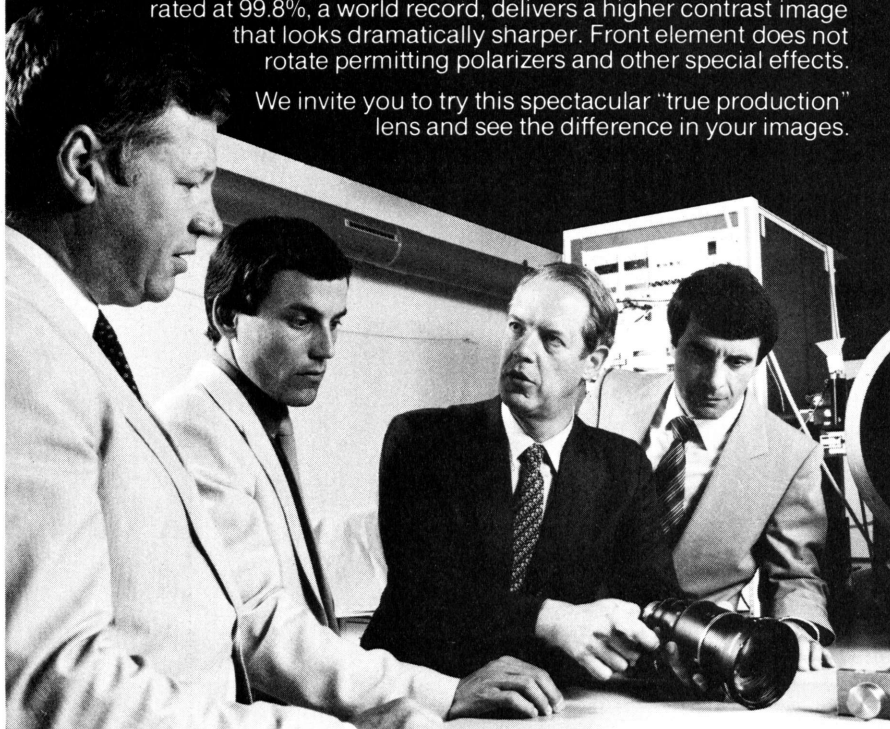
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For more information or to find out how you can contribute contact: National Center for Film and Video Preservation, P.O. Box 27999, Los Angeles, CA 90027.

—Nora Lee
Hollywood, CA

Straw and Valve

In his article on space cinematography (May '85), Les Paul Robley noted that Stanley Kubrick's only effect oversight in *2001* was the liquid food in Dr. Floyd's straw draining down. Robley suggested that Kubrick could have used an extra thick milkshake substance to achieve the effect.

This idea would have worked, but probably not without making Dr. Floyd look like a suck-faced parody of Jerry Lewis in space.

Kubrick could have achieved this effect simply and cheaply by using a straw with a one-way valve.

—Fairleigh Brooks
Louisville, KY

Record of Events

The sad death of Frank Westmore brought to mind your fine story about the Westmores in a recent issue. (July, 1984) Your magazine makes a real contribution to the preservation of Hollywood history every time you run a story about the giants behind the scenes—those whose crafts make the moving picture possible.

—Thomas Kenton
Portland, OR

More Dinosaur Dither

The silent *Last World* used the Williams (not Williamson) traveling matte process to put the brontosaurus into London settings. Ray Harryhausen's *One Million Years B.C.* was released in 1967. His allosaur in that film still ranks as the most realistically animated prehistoric beast. I challenge anyone to counter that opinion, particularly producers who insist that clumsy cheato mechanicals look better on film.

—Paul Mandell
New York, N.Y.

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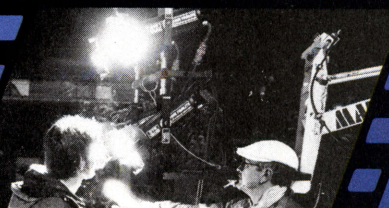
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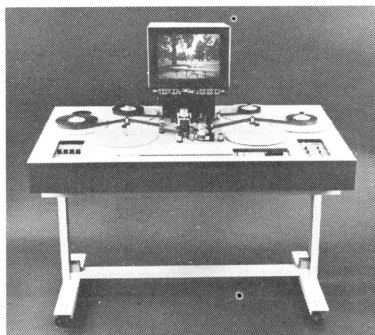
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The Bookshelf

George L. George

Written by Verne and Sylvia E. Carlson with their usual thoroughness and expertise, **Professional Lighting Handbook** is a comprehensive and practical guide to setting up lights, accessories and lighting equipment, and using them for their greatest potential. As cameraman David Quaid, ASC, writes in his preface, this "control of light" affords the imaginative, artistic craftsmen the essential freedom of creativity (*Focal Press, Stoneham, MA, \$22.95*).

An extensive manual on the use of computer-assisted editing systems, Diana Weynand's **Computerized Videotape Editing** deals fully with all standard procedures, concepts and techniques. Developed in conjunction with a hands-on professional training course, it covers explicitly the various steps of the process (*Weynand Associates, Woodland Hills, CA, \$34.95 incl. shipping*).

Recently published volumes in the notable Twayne's Filmmakers series survey the approach to moviemaking of two prominent directors: **Robert Altman** by Gerard Plecki and **Roman Polanski** by Virginia Wright Wexman. Informative and scholarly, they include in-depth analyses of these directors' cinematic concepts in terms of style and content, critiques of selected films, a bibliography, a filmography, and assorted references (*G. K. Hall, Boston, MA, \$18.95 ea.*).

Culled from documentary films that director George Stevens, then lieutenant-colonel, shot during WWII, a number of exceptionally vivid color photographs are assembled in **Victory in Europe**, tracing the course of the war's climatic year. An introduction by George Stevens, Jr., founder of the American Film Institute, and a text by Max Hastings set the historic background of this unique record (*Little Brown, NYC, \$25*).

Originally published 30 years ago, **A Child of the Century** is the irrepressible autobiography of novelist/screenwriter Ben Hecht. The lengthy section about a Hollywood of many years ago brings back such names as David Selznick, John Barrymore, Louis B. Mayer and Harpo Marx in memorable episodes that illustrate the low esteem in which Hecht held Hollywood (*Donald Fine, NYC, \$19.95/11.95*).

Prof. Patricia Erens' **The Jew in American Cinema** is a well-researched study of over 800 features with Jewish characters and themes. From early "ghetto films" to Jolson's *The Jazz Singer*, Chaplin's *The Great Dictator* and Streisand's *Yentl*, Erens analyzes sensitively each film's contribution to the image of Jews in American society (*Indiana U. Press, Bloomington, IN, \$27.50*).

A scholarly survey of sexual ambiguity as a basis for plot motivation, **Hollywood Androgyny** by Rebecca Bell-Metereau discusses sex role reversals – female impersonation, transvestism, homosexuality – in over 250 films with Charlie Chaplin to Dustin Hoffman (*Columbia U. Press, NYC, \$24.95*).

Asserting that "fiction has long been a worthy partner of history," Michael R. Pitts provides in **Hollywood and American History** extensive plot summaries and production data for some 250 features and shorts chronicling the nation's progress (*McFarland, Box 611, Jefferson, NC, \$24.95*).

Sheilah Graham recaps, in **Hollywood Revisited**, her career as columnist during the film capital's Golden Years. Considerably tamer than in the past, she uses hindsight to great advantage in re-assessing the import of the stories that filled her popular column (*St. Martin's, NYC, \$15.95*).

In **Jesus of Nazareth**, director Franco Zeffirelli details the count-

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less technical and artistic problems he encountered while filming *Zeffirelli's Jesus*. He credits an unusual combination of faith and esthetics for his success in this epic production (*Harper & Row, NYC, \$13.95*).

Les Blank and James Bogan document, in *Burden of Dreams*, the harrowing ordeals of producing Werner Herzog's *Fitzcarraldo* in the Peruvian jungle. Their journals and locations photographs record these hardships and pay homage to Herzog's visionary concepts (*North Atlantic Books, Berkeley, CA, \$12.95*).

The 1985-86 edition of Leonard Maltin's popular guide, *TV Movies*, lists some 16,000 US and foreign films currently showing on the home screen. It includes stars, directors, plot summaries and other useful data, as well as knowledgeable ratings and candid reviews (*NAL/Plume, NYC, \$9.95*).

In *Casablanca*, Howard Koch's screenplay of the Oscar-winning film directed by Michael Curtis is reprinted in full, accompanied by a behind-the-scenes look at the movie's production, and Koch's essay on the role of story in contemporary film (*Overlook, NYC, \$16.95*).

A new series of published screenplays, Rutgers Films in Print, is inaugurated with *My Darling Clementine*, directed by John Ford from a script by Samuel G. Engel and Winston Miller. Ably edited by Robert Lyons, this volume also offers critical material - interviews, reviews and commentaries - that provide significant insights into the Western film genre (*Rutgers U. Press, New Brunswick, NJ \$25/10*).

A screenplay written for the Beatles by British playwright Joe Orton, *Up Against It* was never produced mostly because of its "anti-social" nature. It is a strident and hilarious comment on the hypocrisy of contemporary society (*Grove Press, NYC, \$4.95*).



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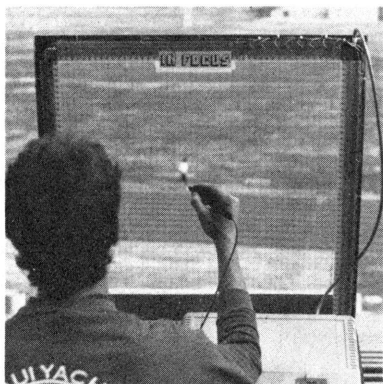
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Automated Focusing Systems

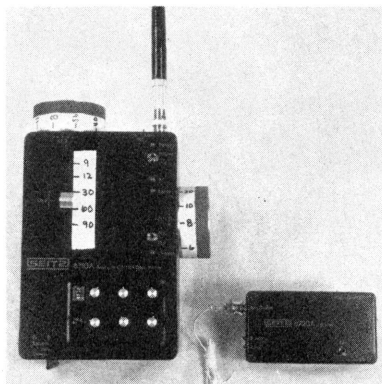


The ability to keep a moving object in focus – whether it is *Spend A Buck* crossing the finish line, a hit man in a crowded airport, or John Wayne and the cavalry cresting the ridge – has always been a major limitation for cameramen working in video or film. Three new automatic focusing systems, available in various stages of research and development, are opening up new areas of artistry and technology for today's cameraman by refining or eliminating follow focusing problems.

Richard Vye of Computer Digital Focusing, Gary Gero and Dr. Robert Bogle of BG Associates, and John Seitz of Seitz Technical Products have approached the problem from different angles and each system varies in its suitability to practical problems.

Richard Vye's system was originally designed for video with an eye to improved sports coverage. It uses a clear, graphics digitizer pad and a light pen and depends on the ability of the operator to follow the action. The pad is set up between the cameraman and the action. Using the stylus, the operator follows the object of the action – the lead car in the Indianapolis 500, for example.

The tablet and pen relay streams of 200 x-y coordinate pairs per second to the 8088 CPU. In turn this information is converted into exact dis-



tances for as many as 10 linked video cameras. All the cameras will be in critical focus wherever the light pen is. A major advantage to the system is its ability to stabilize the long telephoto shot. The telephoto focus "jump" is eliminated.

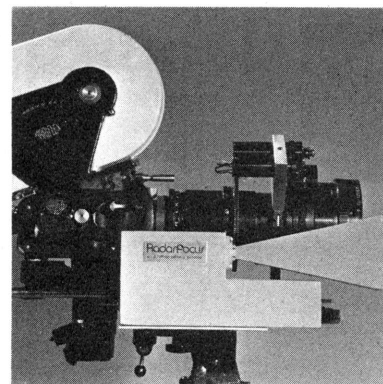
Although the system was originally developed for video, Vye's research and development is moving the company steadily towards film production. A lens is a lens and adjusting the hardware for 35mm cameras is a relatively simple task. With a program developed with his son, Vye can compute lens parameters on any lens within seconds, making the system very flexible. He is also beginning the design phase for a system that would allow pan and tilt control from the graphics pad.

For more information contact: Richard Vye, Computer Digital Focusing, 2603 Centinela Ave., Santa Monica, CA, 90405, (213) 450-4243.

...

GB Associates have developed a system called Radarfocus which allows fully automatic focusing from infinity to six feet by using microwave and digital electronics technology. The heart of the system is a miniature radio transponder which holds tight focus on a predesignated subject.

Brianne Murphy, ASC, and Ted Voightlander, ASC, are giving this



system its first professional workout in this season's episodes of "Highway to Heaven," a Michael Landon Production. Murphy, who was intrigued by the artistic aspects of Radarfocus, also recognizes the safety feature. "It eliminates dangerous situations for operators and assistants," she said. She envisions many applications, such as following animals which are unlikely to consistently hit their mark or, on a more spectacular level, attaching a transponder to a surfer and following the action with a 250mm lens.

The system has basically two parts – a cigarette package sized transponder which is planted on the person or object to be kept in focus and a camera-mounted tracking head. Unique digital processing circuits make Radarfocus compatible with a wide range of lenses. Quick-change modules are available for lens interchange and the system is adaptable to film and video cameras.

Gero indicated that as part of his research and development, he is busy designing a complete system that would control all camera movements. For more information contact: Linda Bogle, Marketing Representative, 6714 Wardlow Rd., Long Beach, CA 90808, (213) 421-1091.

...

Along the same lines, Seitz
continued

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WHILE EVERYONE ELSE HAS BEEN PROMOTING A FORMAT, SONY HAS BEEN PERFECTING A SYSTEM.

Over the last three years, Sony's rivals in the combination camera/recorder arena have spent considerable time inventing wonderful things to say about their new formats. But apparently, they've overlooked inventing many wonderful new products to go along with these formats.

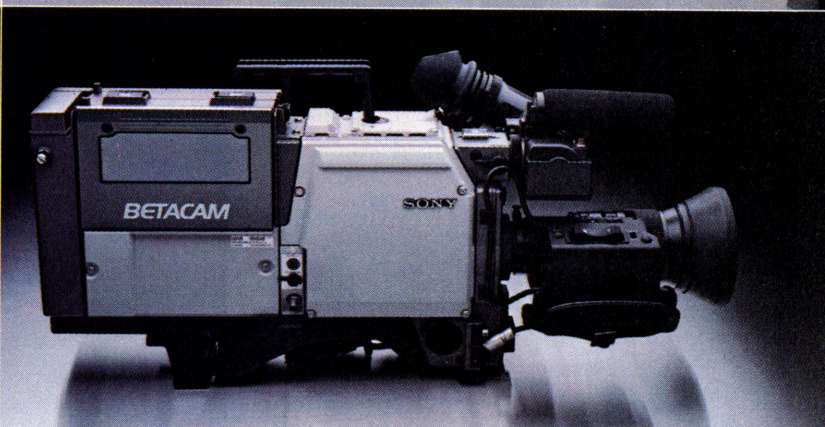
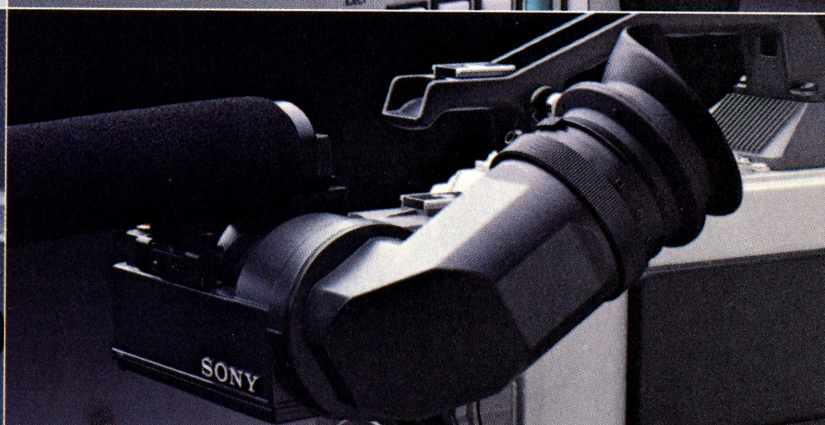
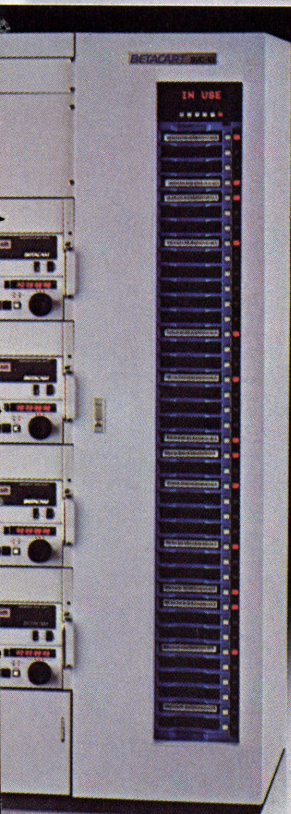
Sony has taken a different course.

In 1982, Sony introduced Betacam™ and the BVW-10 play-

back unit. An evolutionary system that didn't force stations to abandon their existing 3/4" and 1" equipment.

Then, in 1983, Sony expanded the system with the three-tube Betacam, the BVW-40 edit/recorder, and the world's first battery-operated 1/2" field playback unit.

And this year at NAB, Sony announced a major breakthrough in cart machine technology with Betacart.™ A system



At the same time, Sony also unveiled the world's lightest camera/recorder, the BVW-2 Newsmaker.™ And a prototype encoder/decoder system that will make it possible for Betacam to be transmitted by microwave.

Each of these products is the result of Sony's dedication to the needs of the ENG and EFP industry. Work which has earned the Betacam format widespread acceptance by television stations and production companies around the world.

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Technical Products, Inc. has designed the 8700A Follow Focus Radio System which actually provides three channels of servo control – focus, iris and zoom. With this system the assistant is not tied to the camera at all. He can start and stop it, follow focus and with the addition of two more servo channels, pan and tilt the camera from a remote location. Again, a primary advantage is safety for dangerous stunt shots, as well as ease of operation for crane shots or other precariously purchased camera positions.

The system uses a powerful three-quarter watt transmitter and a receiver to provide noise-free control of the camera functions from over 300 feet away. With an optional antenna, ranges up to a half a mile are possible.

The major breakthrough for this radio controlled system is a failsafe signal decoder design which holds the correct servo position during any radio interference. It eliminates motor jitter and unwanted servo motion. This design is what makes the system sensitive enough to control the iris on the camera.

The system was originally designed for Skycam and now is available for use with the Steadicam and Cinema Products servo amplifiers and motors. The Output Module option adapts the 8700A to any other camera.

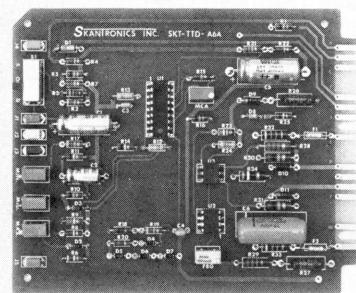
Eight systems have been sold and are in use on various commercials and film productions around the country. Bob Ulland of Ulland Productions used the system this summer on location in Florida for a new Peter Falk/Charles Durning film for Columbia, *Happy New Year*. He reports, "The lens worked flawlessly for us. We were using it on a Steadicam with a Panaglide camera . . . and it was completely consistent."

For more information, contact: Melinda Force, Marketing Manager, Seitz Technical Products, P.O. Box 76, New London, PN 19360, (215) 255-5111.

An automatic focus system that is reliable and definable allows the cameraman a new feeling of freedom, flexibility and convenience. One of the main attractions of an automatic focus system is safety, another would be predictable precision, and a third might be its artistic uses. The latter is limited only by imagination. – (Nora Lee)

New Cases

Porta-Brace has announced a new line of products for the Sony Betacam and other recorder-camera systems. The shoulder case, Quick-Draw professional camera case, BVV-1 recorder case, and BVW-20 field player case accommodate any configuration of the Betacam system and provide padded protection during transport and during operation. Products for Sony systems are now available, models for other recorder-camera systems will be introduced soon. For further information, please contact: K and H Products, Ltd. Box 246, North Bennington, VT 05257. (802) 442-9118.



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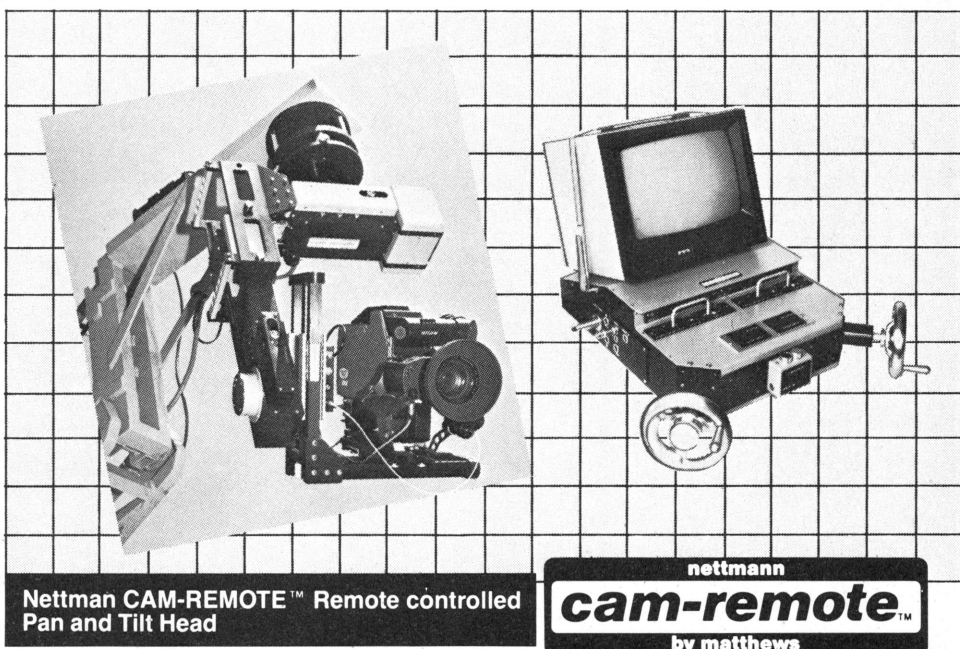
For more information, contact: Skantronics, Inc., 26800 North Iron Canyon Road, Canyon Country, CA 91351. (805) 251-5521.

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High standards are equally applied to the microphone suspension units available for each of the windshields. They have recently introduced a new microphone suspension assembly for the longer shotgun microphones, such as the Sennheiser 816 and the Beyer 727. The new shockmounts incorporate a block of specially formulated foam rubber to support the weight of the longer microphones, and, at the same time, to be resilient enough to protect from shocks during recording.

For further information: Rycote Microphone Windshields, New Mills, Stroud, Gloucestershire, GL5 1RN, England. Tel: 045-367-9338.



Mini Mag Lite

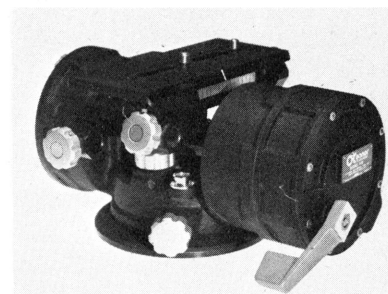
Powered by two AA batteries and weighing only 4 ounces, the mini mag lite is 5½ inches long and in some instances, a cameraman's best friend.

It is ideal for checking the film gate, can be converted into a mini-lantern for ambient light in emergencies. It features a focusing beam, and is 20 times more powerful than any other pen

flashlight.

Manufactured from aircraft grade aluminum, it can be attached to a key ring and used as a self-defense weapon when needed. Comes with spare bulb in tail cap. Accessories are available, including red, amber and clear filters with lens retention holder.

For further information, contact: American Self Reliance Products, Inc., 7240 Valjean, Van Nuys, CA 91406. (818) 994-4955.



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For optimum camera support performance O'Connor offers the System 105-HD which includes: the Model 100C-HD fluid head and Super claw ball or Mitchell tripod with internal adjustable spreader.

For further information contact: O'Connor Engineering Limited, 100 Kalmus Drive, Costa Mesa, CA 92626.

Little Wind Screen

The Mini-screen, (pats. pending), is a new high performance fabric/mesh wind screen. It is superior to the common foam sock, while of about the same small size. It offers higher wind protection along with a sweetened mid-range, (dialogue). The Mini-screen attenuates wind noise 20 dB or more than the largely inefficient foam socks. It follows the microphone frequency

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Susan Seidelman

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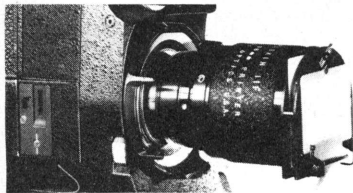
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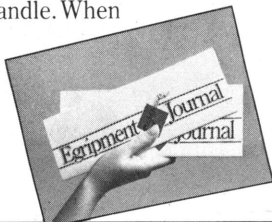
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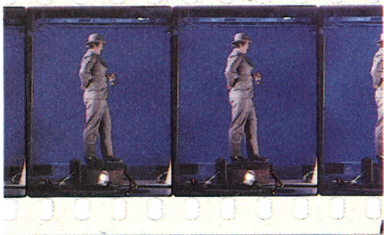


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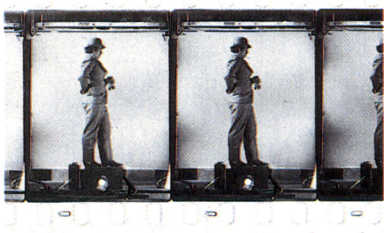
5247 original negative.



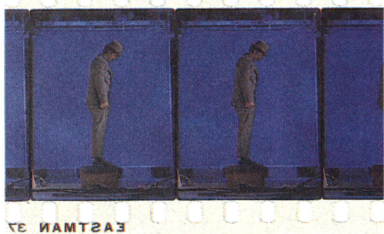
Normal 5384 print.



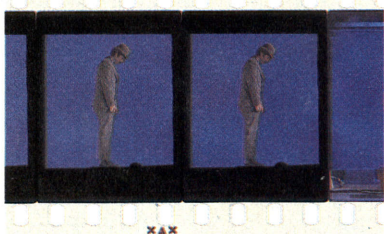
Gamma .65 blue separation mask.



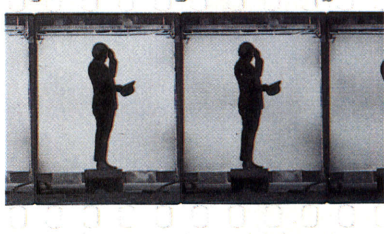
Masked print.



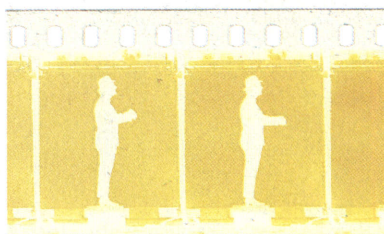
Garbage matte exposure.



Intermatte hold out.



Blue exposure through yellow intermediate yields yellow dye.



Completed masked print with burned out blue screen.



Motion Control Optical Printing

by Mark Sawicki

In 1978 Sean Phillips developed an intriguing series of techniques to create his USC student film, *Armageddon*. I became familiar with his efforts from my involvement in the stop-motion sequences.

The most versatile of his processes involved re-photographing 35mm film registered in an Acme printer movement mounted under an Oxberry animation stand. The image could be moved through space along the x, y and z axes to a much greater extent than would be possible with a conventional optical printer, making possible a tremendous range of image manipulation.

We have since refined this technique through the addition of motion control and special optical printing procedures.

One of the prominent visuals in *Armageddon* was that of the camera tracking over hundreds of bodies shimmering with animated light. These figures stretched to the horizon and matted over each other when appropriate. The following is the primitive procedure utilized to create this effect:

In order to keep the image quality high and make effects work easier, Sean decided to use a now defunct 35mm reversal slide film, 5256, for his original photography and reduce it to 16mm. The basic operation was to shoot one frame of the figure against a black background, then, on the next frame, burn out the figure to create a matte. This overexposure, on the second frame, yielded a white subject against a black surround. At this point the figure and lighting were repositioned and the process was repeated.

The footage of the figure was loaded into a 35mm Acme movement attached to the down-shooter animation stand bed and

bottom lit. This transformed the stand into a crude optical printer. The frames were advanced by hand and spatial movements were created using regular animation stand technique. The frame advance and animation movements were repeated exactly for the burnout matte. Both elements were shot on 16mm Kodachrome. He now had several animated figures and their matching burnout mattes. The Kodachrome burnout mattes were optically printed 1:1 onto 7362 to create holdout mattes. These holdouts were used in conjunction with the Kodachrome front lit figures to create final composites on the optical printer.

The results of his efforts created some truly dynamic and innovative effects, especially for a student effort. I was not alone in this opinion. In 1980 Sean was presented with the student Academy award. The film was a technical success due to its stylized nature and the fact that both matte and foreground elements were shot on the same film. Even though the 35mm camera lacked registration pins, the intrinsic error tended to repeat itself throughout the system. But, what about something more demanding? A realistic recognizable figure, standard film stocks, more difficult moves? We wouldn't have our answer till 1984.

We got together again in 1981 when a production company called CMI was formed by Bob Benderson. I was asked to be the optical supervisor for the company. At the time the company's only piece of equipment was a John Mosceaux bench printer. By and by we purchased a Mechanical Concepts down-shooter with Bill Tondreau's computer. At that point we were able to plunge into our research.

The first thing to do was mechanize a frame advance system. A manually operated Acme movement was out of the question. The ideal solution would be to obtain a printer head but economics led us to use Sean's BNC Mitchell. Unlike the high speeds, the BNC has a little more room behind the aperture to place a printing light source. We wound up using a U-shaped fluorescent tube with a bit of diffusion. It really isn't the best light source due to its non-continuous spectrum, but it was small and cool. In order to have a truly proper light source we would have had to modify the Mitchell in the same manner that the Mitchell process projectors were modified: i.e., moving the pins and aperture above and away from the drive gearing, allowing more room for a conventional printer light. The great advantage was in being able to connect a stepper motor to the camera and have it be an extra channel on the computer. The basic configuration was to remove the camera from its rack-over base and place the camera, aperture side up, on the animation bed. The follow focus was adjusted for the extra height and we were ready to go.

The computer stand gave us the ability to zoom and focus from 72 field to 1/2 field; 1/2 field is well within a 35mm frame. One problem was the light loss one gets when zooming to such close distances due to the bellows factor of the lens. Sean had to program in an exposure compensation to eliminate this problem.

The next choice was what to shoot. Sean had recently been inspired by the work of Rene Magritte and thought it would be fun to recreate a similar vision in motion. This surrealist painter created visions of respectable men in Edwardian attire floating among the clouds as if it was the correct and proper thing to do. We obtained a suitable outfit, found a stage, and shot some footage of yours truly up against a blue screen.

In order to get the best

possible image quality we shot the figure with the camera on its side so that the tallest part of the figure went along the longest part of the frame, sort of a poor man's VistaVision. After several scenes and

takes we were ready for the next step.

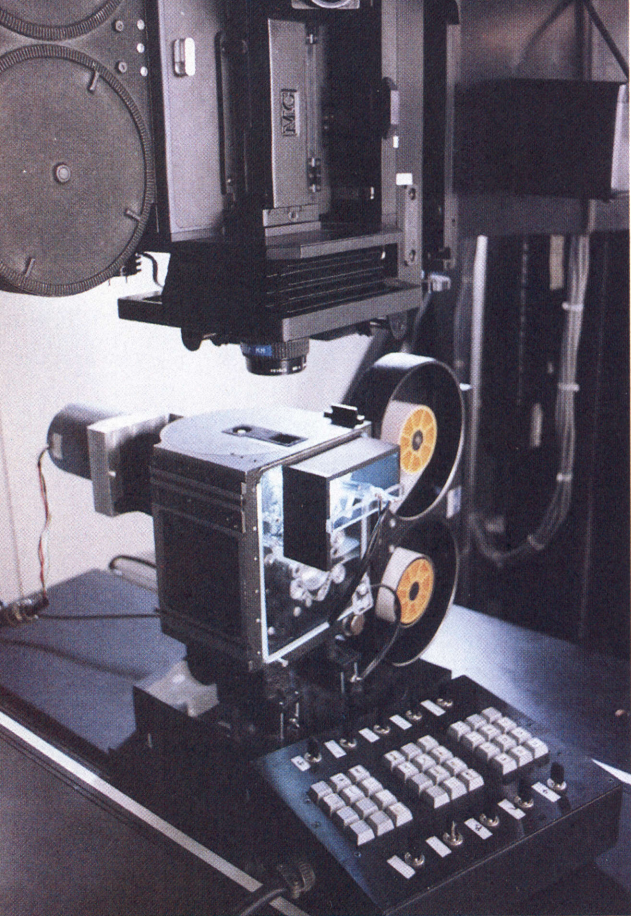
I had been long aware of the difficulty in duplicating print stock onto 5247. In our initial tests of movement and color bal-

Composite with figure at extreme distance. (Note natural lack of definition).

Center, Intermediate size figure in a matte scan composite test (hence the matte line).

Bottom, Full figure composite.





The motion control optical printer.

ance we used this straight dupe procedure for speed and expectedly got poor results. At one point I thought a quick way around this was to dupe the 5384 onto 5272. These results would have been adequate except the slowness of the stock required 4 second exposures! Since our plan was to print 30 or so figures in motion, we'd have been working till next Christmas! Further tests with 5380 printed onto 5247 fared no better.

Around this time I had been having several discussions with Jim Danforth about the making of prints for effects photography. In this technique, a low contrast positive is registered against its negative. A print made from this combination has greatly reduced contrast. After viewing his work and making tests of my own, I knew that this was the way to go. The difference was night and day! (*American Cinematographer*, Nov. 1984). In Jim's application, however, the only requirement was to obtain a good dupe. I wanted to use the low con print as a blue screen element.

Since the BNC did not bi-pack very well, we incorporated a cover matte with the foreground element. In other words, we made a special print that would be low contrast in the figure area and jet black in the blue screen area. The method I went with is what is known as a burn-out technique. In this method one assumes that the blue screen area is fully exposed and therefore on the print one has a maximum dye saturation of cyan and magenta which, when combined, make blue. Now, if you could add blue light to just the area of the blue screen the print film would form yellow dye. This yellow dye, when matching the saturation of the cyan and magenta dye, would create a neutral density, or black.

The manner in which this is done is to first create a hold-out matte that prevents exposure in the area of the subject. This is created by two passes onto 5369. One pass is through the 5247 negative with blue light which yields a positive image of the subject yet lets relatively little light through the blue screen area, since that area in negative form is yellow and therefore the opposite of blue. The next pass is with white light through a red separation. In this case the blue screen area is black and blocks exposure while the positive image creates a negative image on the 5369, which combines the previous blue exposure to create a silhouette.

That was easy enough. Now all one has to do is make a normal print in one pass and then add the subject hold out in bi-pack with the print stock and add blue light. We now have a good print of the subject in front of a totally black surround. This would be terrific except for the fact that the subject contrast has not been modified. When duplicated onto 5247 tonal rendering would be unacceptable.

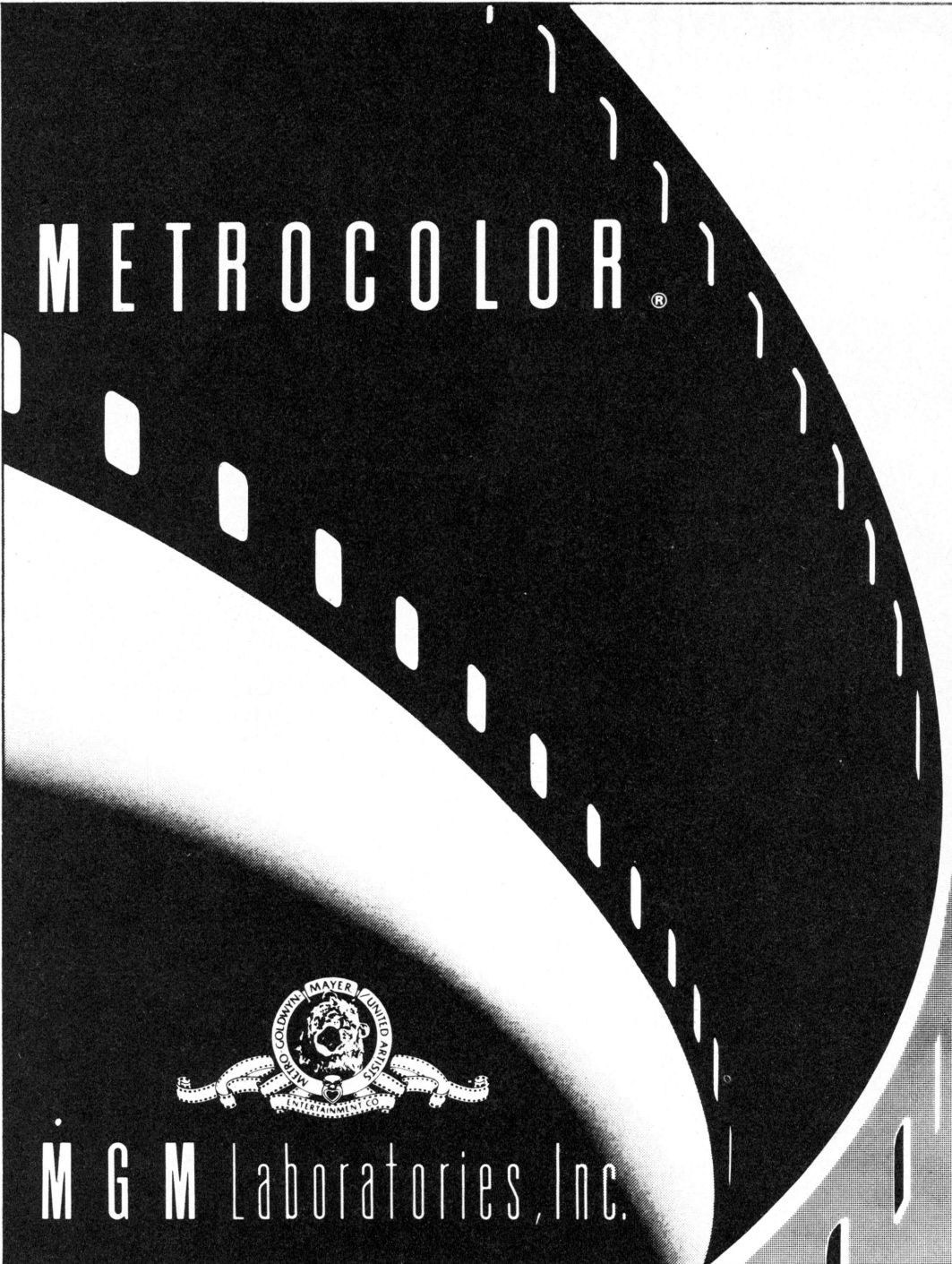
I turned to contrast masking, but found to my chagrin that when I used a white light mask the contrast in the blue screen would also be lowered.

This yielded a good figure but insufficient density in the blue screen black region. For matte shots onto 5247 one needs densities in the area of 2.25. My first impulse was to beef up the masked blue screen exposure by adding yellow light which would create more cyan and magenta dye. To my surprise I obtained a pleasant side effect.

Due to budgetary constraints we were forced to use a painted blue screen and lights that refused to focus. As a result we obtained an uneven but adequate blue screen. When I added yellow light through the special silhouette matte I filled in all the areas of the screen that were exposed inadequately. It was amazing! Our dime store screen looked like a Stewart screen on the resulting print. The density still wasn't up to where I wanted it, though.

After a bit of puzzling the solution appeared. Instead of using a white light mask, why not a blue separation mask? This mask would attenuate all colors except for blue which is the area where we wanted maximum density. It worked. I made a blue separation onto 5235 and processed it to a gamma of .65, put it out of focus, cancelled it to the 5247 and made a percentage exposure with and without the mask. The subject's contrast was lowered while leaving the blue screen unaffected. I put in the subject hold out matte, burned in yellow to even out the screen, then burned in blue light to turn it black. The last pass consisted of a garbage matte burn-in. We finally had our print.

A heavy cover matte was generated in the conventional manner with the same wind and pin position as the low contrast 5384 print. The procedure was to shoot the self matting 5384 with all the computerized moves onto 5247 and hold it as a latent image. We would then load up 5369 into the taking camera and repeat the same procedure shooting the heavy cover or hi con burn-in matte. This step would create a hold out matte which could then be bi-packed with the latent so



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that the background art could be shot without contaminating the foreground images.

I was very leery of this part of the operation since I knew that factors of film shrinkage and big pin pull require the need for canceling mattes. Visually canceling a matte on the stand proved to be cumbersome and risky due to equipment jostling. I wanted to make an IP element of the floating figures and finish the composite in the printer. We soon realized, however, that where we could cancel such an image if it stayed at one plane, the moment it traveled along the Z axis the alignment would drift, unless of course both the print and burn-in elements were exactly matched in their size and position. This same problem also arises in reverse blue screen or front light/back light motion control shots if the track system isn't perfectly repeatable. One is forced into a cancellation compromise. As a protection I made another special print where the blue screen was rendered normally. In the worst case I could treat the floating figures as an elaborate blue screen shot and create mattes and separation from the 5247 dupe. This would have worked nicely since densitometrically a blue screen read off a negative shot from a Stewart screen was very close to the negative obtained when copying a blue screen area of a masked print. But what about actually doing the composite on the crane?

We did a rough composite just to see where we were. Sean was worried about the lack of a pressure plate in the Mitchell. There was a noticeable flutter of the film in the gate because of gravity. He felt that this might translate into registration error and therefore require the construction of some sort of transparent pressure plate. Fortunately, such was not the case. The test turned out fine. We did get a matte line but discovered that it was off by a constant amount throughout the zoom. This meant that our computer stand was repeating and

a slight x y offset between the subject pass and the matte pass would cancel the error.

In order to eliminate the need to visually cancel the elements, a test was developed where the exposure of the holdout was varied as it was held in place over several different positions. After this matte test was processed it was bi-packed over a held position laterit at 5247 and the background was shot. This matte scan test told us the optimum holdout exposure as well as the offset for cancellation. This offset compensation was added to the move program so as to effect the whole of the matte pass including the Z axis.

The final result was tremendous! The quality of the contrast dupe was excellent. The resulting image was very sharp and clear owing to the larger format and keeping generations to a minimum. The most impressive feature to me was the fact that the definition of the mattes held up over extreme distances. This has always been a failing of blue screen shots where the subject was originally shot at its farthest position on the negative. This meant a minimum amount of image area to duplicate and make mattes with. By the time you get the final dupe your matte becomes a blobby, grainy mess.

With this system the matte and figure utilize the maximum image area and both undergo reduction in the final compositing stage. Because of this, the image takes on a natural lack of definition at extreme distances that greatly adds to the reality of the shot. This process adds a whole new avenue of image manipulation at a reasonable cost. It was fortunate that Sean and I had the opportunity to develop this process at CMI and we thank Bob Benderson for giving the go ahead for our tests. We also thank Jim Danforth, Bill Taylor, and Greg Van der Veer, whose generous time and knowledge were invaluable.△

Mark Sawicki is a free-lance optical effects supervisor in Hollywood, whose work is currently being seen in The Terminator.



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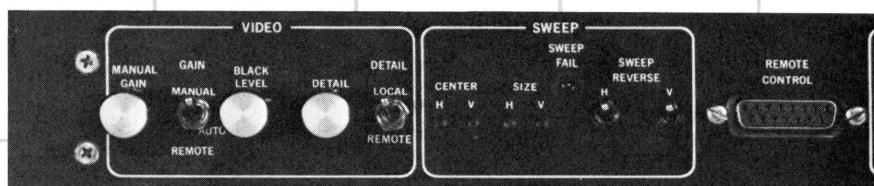
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*Ivano, right, made the first helicopter movie shots for *They Live by Night* in 1946.*

Ivano and Valentino: a Unique Partnership

by Anthony Slide

There have been cinematographers with actor brothers – Stanley and Ricardo Cortez. There have been actors with favorite cameramen who are also lifelong friends – Audrey Hepburn and Franz Planer. But there is perhaps only one cinematographer who developed a close and lasting friendship with an actor before the two became famous, and who shared in the actor's life and career as he grew from "bit" player to legend. The cinematographer was Paul Ivano, ASC. The actor was Rudolph Valentino.

Ivano was a part of Valentino's life during the actor's most important years, as he first became a star. When Valentino and his second wife, Natacha Rambova, were married in Mexicali, Mexico, on May 12, 1922, Paul Ivano was with the couple. And when a California judge ruled that Valentino's divorce from his first wife, Jean Acker, was not finalized and the actor had committed bigamy, it was Paul Ivano who perjured himself declaring that the marriage had not been consummated because on the



wedding night, Rambova was not feeling well and Valentino had slept in his room. When Valentino broke up with Rambova, it was Paul Ivano who introduced him to Pola Negri.

Born Paul Ivano Ivanichevitch in Nice, France, of Russian parents, in 1900, Ivano served with the Signal Corps during the First World War, and after being gassed was invalided out of the army and sent to recuperate in California. In August of 1919, friends invited him to visit Palm Springs. Another hotel guest was a young actor, Rudolph Valentino, whom the wife of the family had picked up at a tea dance at the Alexandria Hotel in Los Angeles. Concerned as to her husband's reaction to Valentino, the woman persuaded Ivano to allow Valentino to room with him, and the two became friends. They went horse-back riding together and Valentino would cook the food Ivano purchased.

From Palm Springs, Valentino moved to New York, but returned on a summons from director Rex Ingram and screenwriter June Mathis at Metro, to play the leading role, as it transpired, in *The Four Horsemen of the Apocalypse*. The cinematographer was John F. Seitz, ASC. Ivano was still in Palm Springs, and Valentino cabled him to come back to Los Angeles, where he was hired as "technical director" for the film, a title which meant, in this particular case, that Ivano was responsible for the French atmosphere, the uniforms of the soldiers, the "look" of the French village, and so forth. Although the Argentine sequences for the film were shot at pre-existing locations, such as the Gilmore House at the Farmer's Market and the San Fernando Mission, the French

village of Villeblanche was re-created on the studio backlot. Contemporary publicity boasted that the village consisted of "finished" houses rather than simply "fronts" and that "in excess of the materials used in the Woolworth Building" were utilized in the construction of the sets. The critics praised the French atmosphere, with lip readers noting that the principals were actually speaking in French. Unimpressed was Ivano's friend, Robert Florey, who told Valentino that the French atmosphere was "false, counterfeited and extremely deceitful."

Ivano and Valentino decided to room together, and took an apartment on Hollywood Boulevard, near Highland Avenue. The pair "lived it up." Paul Ivano remembered, "Valentino was the greatest promoter of dames. He talked them into believing he was the greatest lover. He would take the poor things to dinner, and then to the apartment, where we'd have a drink. And he'd sit down in the armchair, and because he was tired from the day's work, he'd fall sound asleep. I would say to the girl, 'Well darling, I have to get up early tomorrow, so if you want to wait for Rudy wait here, but I'm going to bed.' Ten minutes later someone would knock on my door . . . And the next morning, Rudy would say, 'You s.o.b. - I promoted the dame!' And I'd say, 'I had nothing to do with it . . .' We used to have fun!" As for money, Ivano recalled, "People used to write for photographs, and we had a little letter saying, 'Send 25 cents.' We lived on those 25 cents! I mean we used to get fifteen or sixteen sacks of mail a day!"

After completion of *The Four Horsemen*, Valentino met Natacha Rambova and Madame Alla Nazimova, and, with Ivano, the group moved into a bungalow at 6612 Sunset Boulevard. It was, to say

Camille, with Nazimova and Valentino, 1921.

Below:

Valentino in *The Sheik*, 1921; still by Ivano.





Director Rex Ingram shows Rudolph Valentino how to hold a palette on *The Four Horsemen of the Apocalypse*, 1921.

the least, a curious household. When Nazimova decided to film *Camille*, with Valentino as her star, it was Kosloff to whom she turned for the costumes. When the sketches were sent over, Ivano recalled, "Alla said, 'I don't like this,' and Natacha took a pencil and changed the sketch. 'I drew them,' said Natacha. Kosloff was just using her. So Alla said, 'How would you like to do the costumes for me for *Camille*?' And Natacha, seeing money so she could leave Kosloff, ran out on him. When she left, Kosloff fired at her with a shot gun – put a few pieces of lead in one of her legs, nothing much." Rambova designed the costumes, while the sets, although credited also to her, appear to have been the work of art director Harold Grieve.

Ivano again served as technical director, assisting Nazimova, who was in turn assisting and arguing with her appointed director, Ray Smallwood. It was not a happy company, and Smallwood's wife, actress Ethel Smallwood, recalls that Paul Ivano was far from popular with his fellow technicians on the film, being quickly nicknamed "Ivanawfulitch." (By this time, Ivano had also worked as assistant director, meaning he worked chiefly as a translator, for fellow Frenchman, Max Linder, on the 1921 production of *Seven Years Bad Luck*, and Ivano might well have been considering a career as a director.)

Following *Camille*, Valentino left Metro and signed a contract with Paramount, for whom he starred in his best-known, but certainly not his best feature, *The Sheik*. Filmed at a cost of \$189,000, *The Sheik* was based on a ludicrous popular novel by Edith M. Hull, involving kidnapping and rape in the Sahara. Ivano served as still photographer on the 1921 production.

Paul Ivano is often credited as having worked as an assistant cameraman to William Marshall, ASC, on *The Sheik* and as technical director on *The Conquering Power*. He denied both credits. The first time Ivano worked as an assistant was on Valentino's next film, *Moran of the Lady Letty* (1922), on which Ivano was initially assigned, again, as still photographer. The film was shot on location in San Francisco and at sea, at a cost of \$187,000, and George Melford, who had directed *The Sheik*, was again directing – this time doing a far better job, helped, possibly, by Valentino's displaying some real acting talent, and turning in a performance as good as that in *The Four Horsemen*. Ivano recalled, "We had a 350 ft., four masted schooner, and the third day of sailing out of San Francisco Bay, the head cameraman got frightfully sick – the poor guy was all over the rails." (The first cameraman was William Marshall.) "Bert Glennon, ASC, was his second cameraman, so poor Bert took over, and he said to me, 'Leave your Graflex in the corner, and you come and shoot the second camera for me.' And that's how I started as a cinematographer."

From *Moran of the Lady Letty*, Ivano returned to Alla Nazimova's company, shooting second camera for Charles Van Enger, ASC, on *A Doll's House* and *Salome*, both released in 1922. He never again worked with Valentino, but the friendship continued. At the shared bungalow, Valentino would fall into the part he was playing and keep it up continually. "When he did *Blood and Sand*," said Ivano, "We had a toreador in the house, and it became a nuisance. He was very serious about his work, you know!"

While the California courts were deciding if Valentino was a bigamist, Natacha Rambova decided to take a trip to New York, leaving her "husband" alone in his new home on Whitley Heights (since demolished to make way for the Hollywood Freeway). Director Robert Florey (who had been introduced to Valentino by Ivano shortly after the premiere of *The Sheik*) recalled a typical bachelor evening there:

"At least two or three times weekly I would go to the Whitley house with Mario Caracciolo, a handsome former Italian officer from Naples who had taken the name of Mario Carillo to become a movie character actor; Douglas Gerrard, an actor and director from London; Jean de Limur, a former French Cavalry officer and now a bit player in the movies; and Paul Ivano. In the evening when Rudy or Caracciolo prepared some Italian dishes we rarely saw Valentino's servants, Frederick, his maitre d' and Louise, the cook, his wife, but Carl Widerman, who took care of Marquis and Sheik, the police dogs, came in once in a while for a drink of red wine. Few visitors among the neighbors stopped by except the Italian director Robert Vignola and two actors, Jack Warren Kerrigan, who lived down the hill, and Eugene O'Brien, whose house was above Rudy's. Since Natacha was in the East, we never invited ladies to



On the Four Horsemen set at Metro. John Seitz is at left in front row; June Mathis, Rex Ingram, Marcus Leow and Sid Graumann surround the center camera. Graflex photo by Paul Ivano.

come along. We went to the American Legion fights on Fridays or to the Iris, or the Apollo, and sometimes to the Egyptian to see films. We even drove downtown to the Italian grocery stores or to the Ocean Park pier, then we would drive down the coast or spend the evenings in the Culver City speakeasies, such as the Plantation.”

As Valentino's career prospered, so did Ivano's. He worked as second cameraman on a number of major productions and was one of the cinematographers on *Ben-Hur* (released in 1926). The most important silent film on which Ivano worked and the first for which he received solo cinematographer credit was Josef von Sternberg's *A Woman of the Sea* (also known as *The Sea Gull*), which starred Chaplin's leading lady, Edna Purviance, and for which the comedian put up the financing. Chaplin never permitted the film's release, and is believed to have ordered its destruction. However a very lengthy review of the film, by Welford Beaton, appeared in the July 10, 1926 issue of *The Film Spectator*. Beaton called it neither “a great story nor a great picture, but good enough in both respects to command our admiration and to give us faith in this young man's future.” He continued:

“A simple, straightforward story that allows for a considerable range of emotional acting. Von Sternberg directs it admirably. With pictures remarkable for their composition, lighting and photography (Paul Ivano photographed it) he builds up his main dramatic point, using, all the time, the waves of the

ocean to drive home his points. He never is too obvious, but never too subtle to be grasped readily. And always the picture gives you the impression that the thought back of it is poetic, or that it has the rhythm of a musical composition. This treatment does not detract from the virility with which the story is told, nor lessen its dramatic strength.”

In a later career which included many minor productions, Paul Ivano was again to work with von Sternberg, on *Blonde Venus* (1933, with Bert Glennon) and *The Shanghai Gesture* (1942). Ivano's career is marred by the loss of so many important films which he photographed, including not only *A Woman of the Sea*, but also F.W. Murnau's *Four Devils* (1927), Erich von Stroheim's *Queen Kelly* (1928, and left unfinished) and the rejected version of the 1931 *Frankenstein*, with Bela Lugosi in the role of the monster.

While Ivano was shooting *A Woman of the Sea*, Valentino was making *The Son of the Sheik*. Remembered Ivano, “He called me, and said, ‘If you want to see me, come and see me at the studio, because I leave tomorrow for New York.’ That's the last time I saw him before he died.”

Rudolph Valentino died in New York on August 23, 1926. His buddy, Paul Ivano, whose career in Hollywood Valentino had sponsored, died on April 18, 1984. △

Anthony Slide is the author of numerous books about films and the film industry.



The Best of Ivano

by George Turner

Paul Ivano's career had its share of ups and downs. His work for such anti-mainstream directors as von Stroheim, von Sternberg, Murnau, Josef Berne and Leo Birinski led many producers to regard him suspiciously as being too "arty" for their productions. The ironical result is that he spent a great deal of time working for the independent producers of "Poverty Row" during the Depression years, shooting 5-day Ajax Westerns and 10-day Monogram melodramas. The photography in most of these "quickies," which were made under deplorable conditions on 18-hour working days, is remarkably good.

"I never cut corners on any film I ever shot," Ivano explained. "High budget or low, I went for the same style. Same with TV."

He was also hampered by a tendency to "tell off" directors whose authority outweighed their knowledge.

"He was very creative and artistic," said Lester Shorr, ASC, who assisted Ivano on numerous pictures. "But he was also a rugged individualist and very outspoken, so he was not the most popular man in the business. He was actually kind-hearted. When I returned from military service after

World War II, I had very little money and couldn't find a place to live. Paul said I could come to live at his place for as long as I wished without charge. He had a nice guest room at his place above Sunset Boulevard and I stayed there for several months."

William Margulies, ASC, Ivano's assistant on many films including the unfinished *Queen Kelly* (1929), recalled that Ivano got his first movie assignment as still photographer on *The Sheik* because "the regular 'Graflex man' got drunk. After he became an assistant cameraman, Nazimova fell in love with him. She *bought* him his own Mitchell camera, #18, for about \$4,000. Then he worked for Ernest Palmer at Fox, and Ernie let him shoot the close-ups. He became a first cameraman – they didn't call them directors of photography then – when Fox put him in charge of a South American expedition in 1927.

"Von Stroheim had hired Gordon Pollock to shoot *Queen Kelly*, but Gloria Swanson – who was producing with the help of her boy friend, Joseph Kennedy – requested that Paul be hired to shoot her scenes because he did such gorgeous close-ups of women. I was Paul's assistant. He did the wardrobe tests and had done one scene when Pollock became ill and Paul took it over."

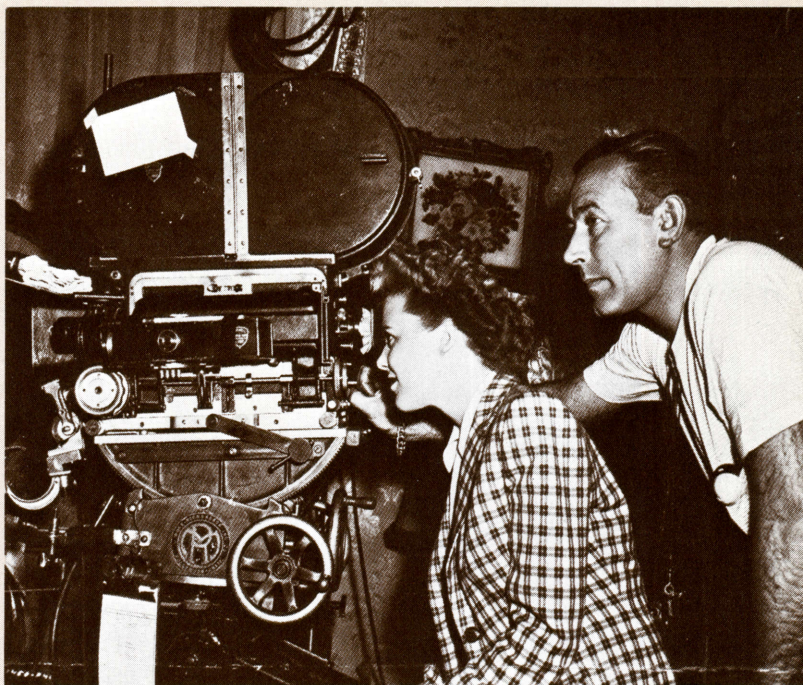
All was not serene on *Queen Kelly* when the volatile director and cameraman locked horns. Ivano described Stroheim as "a would-be Prussian who ruled the set with an iron hand and was impossible. He took a lot of time and he wanted to do everything his way, and we had fights all the time. I was fired three times a day."

Margulies recalls that after the first "firing," Gloria Swanson in turn told Stroheim *he* was fired, so Ivano went back to work with Margulies acting as go-between.

The portions of *Queen Kelly* that have been restored are remarkable in that the scenes photographed by Ivano bear little resemblance to Stroheim's other films. A misty, dreamlike quality achieved through subtle lighting and lens diffusion creates an impressionistic quality that is a far cry from the hard-bitten realism of *Foolish Wives* and *Greed*. That celebrated gauze-diffused shot of Swanson surrounded by candles that was used 22 years later in *Sunset Boulevard* is Ivano's.

Ivano's artistry is no less compelling in the unjustly forgotten *Dawn to Dawn*, a 1934 romantic-tragic rural drama which has the look of French genre paintings brought to life.

His work for Josef von Sternberg in *The Shanghai Gesture* (1941) includes some highly effective crane shots in a crowded gambling hall with a huge roulette wheel in the center to symbolize the vortex into which the protagonists are being drawn. An exotic, glamorous sheen dominates scenes of exquisite languor to suggest sins that could not be shown under the production code and which makes the final revelations of vengeance and murder all the more shattering. Although the picture was heartily



Producer Joan Harrison and Ivano at Universal, 1945, on *The Strange Affair of Uncle Harry*.

Below
On the *King of Gamblers* set at Paramount, March 6, 1937: Rudolph Mate, ASC, Marc Allegret, Claire Trevor, Robert Florey, Vermeer Labito, George Archainbaud and Paul Ivano.

Opposite
On the set of *The Suspect* at Universal, 1944: Robert Laszlo, property and effects expert, Ella Raines, Frank Heisler and Ivano.

disliked by critics and the public alike when it was released in 1941, it is considered a classic virtuoso work today.

Some of Ivano's finest work was done at Universal during 1943-46, when he shot everything from low budget musicals and melodramas to some of the studio's biggest prestige films. When the great French emigre director, Julien Duvivier, arrived at the studio, Ivano was assigned to him. "Paul spoke French, Duvivier spoke French, and they got along fine," Margulies said.

Flesh and Fantasy, produced by Duvivier and Charles Boyer, was a four-part picture dealing with dreams and the supernatural. Stanley Cortez, ASC, photographed the segment with Edward G. Robinson and Thomas Mitchell, which was based on an Oscar Wilde story. Ivano photographed

Paul Ivano

Filmography

As Co-Director:

1920 *Seven Years Bad Luck*

As Technical Director:

1921 *The Four Horsemen of the Apocalypse*
Camille

As Second Cameraman:

1922 *Moran of the Lady Letty*
A Doll's House
Salome
In the Palace of the King

1923 *Three Wise Fools*
Nelly, the Beautiful
Cloak Model
Wild Oranges
Vengeance of the Deep

1924 *Ben-Hur*
Lorna Doone
1925 *The Man Who Came Back*

As Director of Photography:

The Dancers (with Ernest Palmer, ASC)

1926 *The Seagull*
Yellow Fingers (with Palmer)

1927 *The Four Devils* (circus and 2nd unit)

1928 *No Other Woman* (with Palmer)

Street Angel (with Palmer)
Queen Kelly (with Gordon Pollack)

As Second Cameraman:

1930 *Gold Diggers of Broadway*
The Show of Shows
Hell's Angels
The Green Goddess

As Director of Photography:

1931 *Frankenstein* (tests)

1932 *Blonde Venus* (exteriors)
Three and a Day

1933 *Dawn to Dawn*

1936 *The Plow That Broke the Plains* (part)
The Riding Avenger
Calvacade of the West
Ambush Valley

1937 *Battle of Greed*
Luck of Roaring Camp

The Hoosier Schoolboy
The Thirteenth Man
Atlantic Flight
Blazing Barriers

1938 *Fury Below*
I Am a Criminal

1939 *Gone With the Wind* (2nd unit)
Should a Girl Marry?
The Girl from Rio

1941 *The Shanghai Gesture*

1942 *About Face*
The Bashful Bachelor
Isle of Missing Men

1943 *Honeymoon Lodge*
All By Myself
Flesh and Fantasy (with Stanley Cortez, ASC)

Fired Wife
Larceny with Music
She's For Me
You're a Lucky Fellow, Mr. Smith

1944 *The Imposter*
Adventure in Music (part)

See My Lawyer
Slightly Terrific
Pardon My Rhythm
Dead Man's Eyes
Destiny (with George Robinson, ASC)

The Suspect
Hi, Beautiful!

1945 *Swing Out Sister*
The Frozen Ghost
The Strange Affair of Uncle Harry

Men in Her Diary
Senorita from the West

Pursuit to Algiers
Honeymoon Ahead (with Charles van Enger, ASC)

I'll Tell the World
1946 *The Spider Woman*
Strikes Back

Black Angel
Little Miss Big
The Dark Horse

1947 *Fun on a Weekend*
The Gangster
They Live by Night (aerial)

1948 *Million Dollar Weekend*

Concert Magic
The Mozart Story
Johnny Belinda (aerial)

1949 *The Lovable Cheat*
Search for Danger
Criss Cross (aerial)

1950 *Champaigne for Ceasar*
The Second Face

1951 *Pickup*
Gold Raiders
The Girl on the Bridge
Japanese War Bride (aerial)

For Men Only
Red Snow
Strange Fascination
Captive Women
Breakdown

1953 *One Girl's Confession*
Fangs of the Wild
Hold Back Tomorrow

1957 *Lizzie*
1962 *The Nun and the Sergeant*

1968 *Chubasco*

the Mardi Gras segment with Betty Field and Robert Cummings, a circus fantasy with Boyer and Barbara Stanwyck, and an episode about a fugitive and a blind girl with Gloria Jean and Alan Curtis. The latter story was cut from the picture and, with added scenes photographed by George Robinson, ASC, was released as a separate feature, *Destiny* (1944). The otherworldly visual quality of *Flesh and Fantasy* is maintained superbly throughout.

Duvivier's *The Impostor* (1944), starring Jean Gabin, contains some of Ivano's finest exterior photography in jungle scenes made at Lake Sherwood.

Atmospheric photography by Ivano helped to create a believable London on the studio backlot in *The Suspect* (1944), directed by the German Robert Siodmak and starring Charles Laughton and Ella Raines. Some crane shots in the street scenes are especially memorable. Another fine mood piece is *Black Angel* (1946), directed by Roy William Neill from a Cornell Woolrich novel. Photographic highlights include the opening boom shot from the street into an apartment window and a surreal recreation of a murder as remembered by the drunken killer.

For *They Live By Night*, made by RKO in 1947, Ivano made what are believed to be the first helicopter shots in a feature film. These scenes, which created a sensation at the time, begin the picture, the camera following a carload of men bent on robbery. He carried the technique further in *Johnny Belinda* (1948) and *Criss Cross* (1949).

Late in his career, Ivano photographed close to 600 television shows. His fast working methods and unfailing quality made him much in demand. He relaxed from the tough production schedules by sailing on his 50-foot racing sloop. "He was tough on novice directors and liked to tease the leading ladies," Margulies said. "He wore a beret, which some people didn't like. He was a great host and he could be a pain in the neck. Difficult - but he was a very good cinematographer and a very good teacher."

And, despite a career which spanned the eras of silent and talking pictures, of black and white and color, of wide screen and television, he was true to his theories of proper craftsmanship and artistry. "I always used diffusion on every film, even for TV," Ivano said. "I always used two lenses, a 30mm or 32mm and a four inch. The zoom lens and the exposure meter are the curses of the motion picture industry." △

TV Segments

This is the Life (78); *Foreign Correspondent* (25); *Waterfront* (25); *Telephone Time* (78); *Desilu Playhouse* (10); *The Texan* (78); *Man With the Camera* (10); *The Lawless Years* (pilot and 36); *Jim Backus Show* (26); *Please Don't Eat the Daisies* (52); *The Lieutenant* (10); *Man From UNCLE* (10); *Peter Falk* (pilot); *Daniel Boone* (pilot); *San Francisco Dateline* (pilot); *Family Affair* (52); *Schlitz Playhouse of Stars* (31); *Loretta Young Show* (10); *Daktari* (10); industrial features: *Union Oil*; *Shell Oil*; *Electrolux*; *Westinghouse*.

Who says you can't get a million dollar look on 16mm?



Seated foreground, L. to R.: Lynn Roth, Executive Producer. Ernest A. Losso, Producer. Standing, L. to R.: Pete Norkus, 2nd Asst. Operator. Bob Porcello, 1st Asst. Al Taylor, Director of Photography. Camera equipment by Ultravision.

Photo by Bruce R. Mandes

Just take a good look at "The Paper Chase," on Showtime cable TV.

Commenting on the decision to switch the highly successful series to 16mm, Executive Producer Lynn Roth said, "At first we were apprehensive about using a 16mm system, and now, after seeing the richness in quality we have been getting, it would be hard for anyone to talk me into going back to 35mm."

Filmed with 16mm camera and lenses from Ultravision.

Why from Ultravision? Says Director of Photography Al Taylor: "Where you get your cameras and lenses is just as important as what make and type they are. The Ultravision people really care, and keep their equipment in immaculate

condition. Their 16mm camera is marvelously quiet, the lenses are sharp as blazes, and to change magazines takes just a second. I'm as pleased as can be." D.P. Al Taylor, born in Wales, is an Associate of the Royal Photographic Society of

Great Britain, Motion Pictures. He emigrated to the U.S. in 1952, and has been shooting films in Hollywood since 1954, with 38 features and approx. 1,000 filmed commercials to his credit.

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Hero: A Strange World of Misfits

by J. Greg Evans

Alexandre Rockwell's film *Hero* is a multi-layered film as complex and far reaching as the American dream, yet as simple and honest as a young boy's quest for self-understanding and knowledge. It is the story of a handicapped boy's dream for a family; of two young women, one Mexican and the other Japanese, whose inability to escape their past has denied them identity; and of a man so trapped in the mythology of what he should be that it ultimately destroys him. It is a reassessing of the American dream, a sort of *Wizard of Oz* of middle America. But most of all, *Hero* is a film of images. Often tragically haunting, at times comic, they are always revealing.

With the completion of *Lenz*, his first feature length film in 1981, Rockwell was beginning to build up the kind of momentum that led to the partial funding and ultimate making of *Hero*. At the 25th London Film Festival, where *Lenz* was voted one of the outstanding films of 1981 by the British Film Institute, then at the Berlin Film Festival, where screenings of *Lenz* were extended because of audience response, it became clear that some financial support could be generated from this positive reaction.

With approval from ZDF (German television) of a six page synopsis outlining the major themes and ideas that Rockwell wanted to develop for *Hero*, he

began to construct a story and characters. Like many artists, Rockwell draws from other forms of art as well as from life experiences; but his interaction with other people serves as his greatest influence. In fact, so influential were four people in particular to the story development of *Hero* that he ultimately cast them to play the characters in the film. Although untrained as actors, it was their own personal dramas that moved Rockwell to develop the story.

After receiving the first of four financial installments from ZDF television and having raised an additional \$20,000 he collected his cast and crew and headed for San Francisco where shooting began.

In the film, Mika and Kim (Mika Yamada and Kim Flowers) are barely able to support themselves and young handicapped Paul, and are deemed unfit to take care of him. He must go to a state institution. In the unnamed, but obvious government office where this meeting takes place, principal cameraman Robert Yeomans combined existing daylight with unbalanced fluorescence to create a cold and sterile environment. Kim and Mika seem to blend into the lifeless white of the walls like creatures void of substance or identity.

In contrast is a scene which takes place that night as two drunk and unhappy women lament their situation. Although shot in the most domestic of settings, the home, the scene is lit in such a way as to look completely alien, yet at the same time frighteningly familiar. Pools of light accentuate the different rooms of the house. The sickly blue light coming from the television in the living room was accomplished by placing a 750 above their heads and a 750 from below. Both lights had a blue and green gel in front of them.

In one of the bedrooms was a 1000 watt Lowel with an orange gel, making this room the most appealing because of its soft, almost romantic lighting. In Paul's room a flashing red light seems to disjoint the stark reality of the

other two rooms, giving it an air of mystery and fantasy. The red gelled 1000 watt Lowel used for this shot was placed outside of the window and directed in through lace curtains to help cut some of the harshness. The light was then clicked on and off by hand. This scene was shot with as low a light level as Rockwell and Yeomans could get away with. Using Kodak 7293 helped in making the pools of colored light from room to room distinct and separate, creating a very lonely isolation in such a small area.

It is in Paul's room, as the red light flashes on and off methodically, that he first encounters Hawk, an American Indian who begins to tell Paul the story of Jumping Mouse, a story that will ultimately parallel Paul's. Paul decides that they must go to Truth or Consequences, New Mexico where they will be left alone to become the family they want to be. With the San Francisco shooting completed, Rockwell rented a mobile home and, with cast and crew, headed out into the desert.

A dramatic, shot introduces us to the vast expanse of the desert as we see a cab slowly moving along the desert floor. A slow zoom back using a Nikon 250mm lens gradually decreases the cab's size until finally it can no longer be found against the similarly colored sand and brush of the desert.

Later that day at a roadside bar, they meet Cody, a strange and eccentric cowboy. To light the bar, Rockwell and Yeomans used a 1000-watt Lowel near the ceiling to light the actor's faces, and a 750 from below as fill. This effectively simple lighting set-up served two separate purposes. The colorful flashing beer lights seemingly suspended behind the characters in the blackness are the only indicators as to where they really are. Secondly, as they leave the cool darkness of the bar, the outside appears unbearably hot and bright.

With his suitcase (which Cody claims is filled with "valuable information on America"), Cody plans to go with the others.

Before they can leave, Cody suddenly disappears behind the building and then slowly emerges dragging behind him a 15 foot high plastic bull which he promptly attaches to the back of the cab. This humorously larger-than-life image clearly is connected to Cody's larger-than-life character.

Rockwell acquired what must be the world's largest bull from (where else?) the "world's largest parking lot" in Tucson, Arizona. When he was unable to return the bull on the date promised, a police APB was issued. Rockwell jokingly put a mask over the bull's face to disguise it. Not once were they stopped by the police, and all charges were dropped upon the bull's return.

To shoot inside the cab, 85-N6 gels were put on all of the car windows, and only white reflectors inside the cab were used to re-position any necessary light. When shooting from the outside into the cab, Rockwell would wait until the sunlight was directly facing the side of the vehicle he would be shooting towards, thereby minimizing the use of any additional lights.

Although *Hero* is Rock-

well's second feature length film, it is his first in 35mm. (A blow-up produced from Super-16.) The decision to go with Super-16 and blow up to 35mm was originally based on economic necessities but in the desert, there were some unanticipated problems. There were few labs that could process and develop the film, and most of them were located in the East. Super-16 projectors also were rare. They were unable to view dailies during filming, so, as Rockwell put it, "... we were shooting blind."

Rockwell questions the savings of blowing up compared to shooting directly on 35mm. Admittedly, camera rental, film processing, and dailies were less expensive than 35mm, and for a lot of the film, the Aaton LTR was probably better suited for the diverse shooting required. The Aaton was very reliable—a god-send while filming in the desert—and its size and weight allowed for quick mobility and ease in setting up. This proved advantageous because of the amount of shooting done inside the cab. The Aaton also proved valuable later on in the shoot. Besides having a small crew, Rockwell ended up shooting the last half of *Hero* himself when

Paul dreams in the desert. Opposite page: Giant plastic bull trails behind taxi as group heads out to cross the desert.





Cody re-enacts Custer's last battle with chickens dressed in cavalry uniforms.

cameraman Yeomans had to leave because of previous commitments.

On the other hand, the blow-up to 35mm from Super-16 is very costly. "It's about \$25,000 coming at the end," recalls Rockwell, "and if you're raising money it's a very difficult thing to come up with that hunk of money all at once." He also believes that many filmmakers are intimidated by 35mm because of the stigma that shooting in 35mm will automatically double the crew size and tack on all kinds of unexpected costs. Rockwell believes that if a filmmaker can keep his shooting ratio low (10 to 1 and under), and for most independents that is very realistic, then shooting in 35mm can be competitive with Super-16. "There isn't that big a difference between shooting for blow-up and and shooting in 35mm," Rockwell believes. "I know a lot of people will argue that, but a lot of people haven't shot on Super-16. I think Super-16 could be advantageous to many people, especially if you've got a clear subject you are confident with; but with my style of filmmaking, I think 35mm is much better."

Because shooting with Super-16 requires that only certain lenses should be used to produce the best quality blow-up because the focus is magnified, the use of the Nikon 250mm zoom lens for two particular shots is of interest. The 250mm used with the

Super-16 format is technically an imperfect lens because its focus, unlike that of the Cooke and Zeiss lenses used on the shoot, is not sharp enough to get a clear image when blown up. Instead, it tends to make the image look a bit hazy. It is, however, this hazy quality which gave the two images shot through the 250mm their striking visual impact.

"One has to realize that technical things should really be the servant," says Rockwell, "because in this instance an inferior lens gave us a superior image." Talking of art and industry reminds Rockwell of a quote that his grandfather, the Russian animator Alexandre Alexieff, once told him: "A work of industry is judged by its lack of defects, whereas a work of art is judged by its presence of qualities."

"I think that is something to remember." Adds Rockwell, "that, in fact, when one makes a film it is not an automobile or a work of industry. One is trying to make something that has quality. And to do that you have to take risks, and you can't be obsessed with being perfect. Because if you are, you'll never be able to let in those moments of heightened magic."

One such moment of "heightened magic" occurs as our travelers are driving through the desert. Cody is showing Paul and Mika some of the "valuable infor-

mation on America" he has packed in his suitcase when Mika points to some pictures of the astronauts on the moon. Because of her cultural upbringing, Mika does not believe that men have walked on the moon merely on the evidence of a picture. Cody becomes irate. As he begins to yell at her, Mika turns away from him and looks out of the car window. The camera slowly rises above the car and is suddenly, magically, above the center of the Grand Canyon looking down at the breathtaking beauty below.

This visually stunning shot showing the magnificence of the world beyond the narrowness of their lives was accomplished by taking two separate shots and cutting them together. The first one is of Mika looking out of the cab window. The hand-held camera was operated from the back of a pick-up truck that was moving parallel to the cab. At the right moment, the camera was lifted above the cab roof and zoomed, using the Cooke 12 to 50mm zoom lens, into the red cliffs next to the cab. The second was a helicopter shot which started on the red stone cliffs of the Grand Canyon and then zoomed back to the final breathtaking image below. The helicopter shot was also hand held and filmed through the window of a tour helicopter to minimize cost. By making a direct cut from the shot zooming in to the shot zooming out, and by matching the colors of the cliffs so closely, the image takes on a single shot magnificence rarely seen in a film costing only \$230,000.

Many such images in the film, Rockwell says, he "couldn't possibly have imagined beforehand. But by taking all of the elements and making do with what I had, I was able to get some images that were really exceptional, that art designers in Hollywood would have to spend a million dollars to come up with."

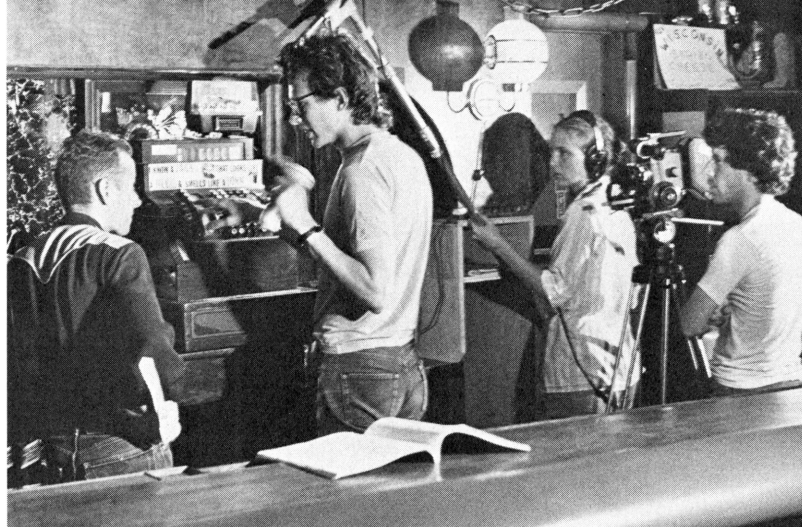
One scene is set at night in front of a blazing fire. It was shot on 7293 and supplemented by the headlights of the cab and a moving branch to help simulate

the flicker of the fire as each of the three adult characters talk of a past from which they cannot escape, which has blinded them to what is real and in a sense robbed them of identities.

Another scene in a nearby church is lit by the reflecting light of the sun coming through the front window and bouncing off the altar, the moodiness of the church enhanced by a 1000 watt Lowel with a red gel on it faced in from the outside. A 750 gelled with red, but also filtered with an N6 and used for a fill, follows Mika from the door to the altar. She kneels in front of the altar of this hauntingly lit church and wipes white make-up over her oriental features in a pathetic attempt to become something she is not.

They arrive in Truth or Consequences, New Mexico, just as the local Fourth of July parade is beginning. In an image that has the parade appear as though it were growing out of the ground, the cab pulling the enormous plastic bull suddenly moves in front of the rising parade and slowly drives away as though its occupants are unaware of the parade. This very powerful image, more than any other in the film, seems to symbolize their inability to find the American dream. Shot with the camera very low to the ground using the Cooke 50mm, the scene, although shot at 24 frames per second, seems to have been filmed at a much greater frame speed.

Finding a tent for a "religious revival" came only after Rockwell had exhausted all attempts to get one at a price he could afford (they cost upwards of \$3,000 for one day's use). Finally, the local National Guard agreed to let Rockwell use some of their tents. By tying them together, he was able to construct a tent the size he needed. The next problem encountered was that even though the front and the back of the tent were open, the denseness of the canvas prevented the sunlight from coming in, so the difference in exposure under the tent was as many as six f-stops. Concerned



that the drop-off might appear too great, Rockwell decided to light the inside of the tent. With the help of the generator they had brought along plus some additional outlets, he used all five 1000-watt Lowels, the three 750's, plus 6' x 6' crushed foil reflectors in an attempt to bring up the light levels inside the tent. But now with all of the lights in the tent, the heat was unbearable. To minimize the time they would all have to spend inside, Rockwell shot the scene with two cameras.

Using two cameras during the filming of *Hero* developed almost at the same time as the story. Because the story coincides so closely with the lives of the people playing the parts, Rockwell became interested in the idea of using one camera to film the already prepared script and the other camera to "capture" the actors in moments when they were removed from the film, interweaving the two elements in a way that would re-define the term docudrama. Certainly not a documentary, but again by all definitions not a dramatic narrative, it was as if Rockwell were attempting to capture the essence of life while transcending the boredom of living.

When Yeomans had to leave, Rockwell spent the last five weeks as both dramatic and documentary filmmaker, shooting the scenes planned and the angles needed, but then turning around to film a moment in time, spontaneous and unrehearsed. It was during those last five weeks that

the filming of moments planned and unplanned "gave the film its final push to life," as Rockwell says.

In one of the film's funniest moments, Cody wanders into a supermarket where some kind of contest has just begun. As though born with an instinctive knowledge of consumer habits, Cody grabs a shopping cart and, although behind the other shoppers, takes off down the aisles of the store stuffing his shopping cart furiously with frozen turkeys and potato chips, and rounding the last aisle victorious. Rockwell used the light coming through the store window and the store's fluorescent lights. He added light to the dark areas of the store by using the Lowel lights with blue gels to maintain the bluish look inside the store. A wheelchair with inflatable tires was used as a dolly. The 10mm Zeiss helped to absorb some of the "shock" of moving.

To create the image of the characters caught in desert heat Rockwell tied the pickup truck parallel to the cab. While the cast actually pushed the cab along the desert floor, the crew pushed the pickup tied next to it. Since the shot was done without sound, Rockwell was able to direct the actors when to move in and out like slow motion pistons, while the assistant cameraman followed focus since the Cooke 50mm lens was used from only four feet away.

All moving camera shots, except for the wheelchair used in the supermarket, were executed

Director Rockwell at cash register instructs Cody as Yeomans and crew get ready to shoot.

from the back of the pickup truck as were the slower dollies. Letting air out of the truck's tires made the dolly movements more smooth and professional considering that many of them were hand-held.

In one symbolic scene from *Hero*, Paul is walking through a graveyard of bleached bones – bones that represent the past, or the things that keep us from moving forward. Paul's blurred image, as though engulfed in heat waves as he walks through the graveyard of bones, was only successfully achieved after several different approaches were tried.

The desired effect was that of heat surrounding the image of Paul. To do this, Rockwell held a small barbeque full of hot coals under the camera lens as they filmed the scene, hoping the heat from the coals would create the desired look. Unable to see dailies, he was not aware until he returned to New York that the effect had not worked because the taking lens was too wide to show heat distortions. Unable to go back and reshoot the scene, Rockwell had to try other methods.

He tried to create a rippling heat wave effect by literally holding a cigarette lighter between the camera and the optical printer, and when that failed he held the lighter between the projector and the printer. Rockwell finally achieved the effect he wanted by first having much of the color of the shot bleached out, then doing a rigid pattern of double framing. "I did an offbeat double frame every 5th frame," says Rockwell, "so that it created a vibrant slow motion effect." He accredits his persistence to the fact "that I always have an image in my head of what I want, and I'll try anything to get it."

It would seem, however, that Paul's heroic walk is in vain. Lying lifeless in front of the cab, Kim and Mika are blind to his sacrifice for them. Just then the camera, high above the cab, swoops eagle-like down upon the roof of the cab. A cherry picker was used to lower or "swoop" the camera down. Shot at 24 fps, the great speed with which the camera lowers is because Rockwell instructed the operator of the cherry picker to "drop" the crane as

quickly as possible. Fortunately for Rockwell, who was holding the camera, the operator was able to stop the crane a foot above the cab every time.

Hero was shot in chronological order, as Rockwell prefers, especially when using non-actors. The last scene came at the end of ten weeks' shooting. For three days the cast and crew waited for the rain to stop and the sky to clear so they could pull off this last shot and go home. Finally, out of necessity, Rockwell was forced to shoot the scene despite the grey rain clouds that were continually surrounding them. Using the generator to power a Lowel IK with a gold sunlight filter on it, he shot the scene. The resulting image is a contrast in moods. Surrounded in the background by the cold grey-ness of the clouds, the actors in turn are bathed in warm golden tones making the image real, yet at the same time unreal.

Hero ends with Paul waking up, his experience only a dream. But as he stares at the picture of Hawk pinned to his bedroom wall, Paul knows that this was a lot more than a dream. △

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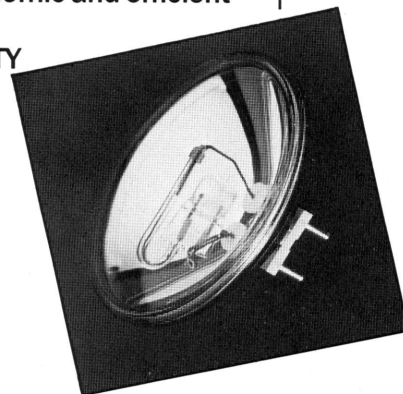
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Photos by Robbie Robinson, Larry Burbick

Cinematographer John Hora on

EXPLORERS

by Adam Eisenberg

At the beginning of *Explorers*, a young boy named Ben (Ethan Hawke) has a dream – he sees a vision of a vast computer landscape that ultimately holds the key to a great adventure. This landscape is actually a computer schematic, and when Ben and his friends duplicate its design and activate it, they discover a power source that eventually takes them on a mission to the stars.

For director Joe Dante and his cast and crew, making *Explorers* a cinematic reality was ultimately a great adventure of its own. In fact, with a production

schedule limited to just one year, they found themselves in a mad race against time to complete what would prove to be a highly ambitious \$23 million production. As a result, when assembling his production team, Dante selected people he felt most comfortable with and chief among them was cinematographer John Hora.

"It's tempting to say that I wouldn't work on a film without John, but that would only partially be because he's so good," he says of the man he's worked with on *The Howling*, *Twilight Zone—The Movie* and *Gremlins*. "The other

reason is just because he is so much fun to work with. He is very knowledgeable and immediately understands a reference you might make to the look of some old picture or some DP. He also has a unique style and, since he and I like the same look, there are a lot of things that we don't have to talk about.

"Most of the good Hora stories are, I'm afraid, not from *Explorers*, but there is the *Howling* story about the naked couple," the director adds with a mischievous grin. "We had this love scene in *The Howling* which was

very difficult to do. It was in the middle of the night outdoors and it was freezing, and everybody wanted to go home, and the actors were embarrassed.

"It's a horrible kind of a scene to direct anyway, and we had a fire, and these people were rehearsing in front of the fire while John was pulling out these filters and saying, 'Well, what do you think about this filter and how it makes the fire look,' and I said, 'yeah, that's not bad.' And he said, 'Well, what about this one,' and I said, 'Well, that's pretty good,' and he said, 'Well what about this one?'"

"I looked down and he had a box with 50-100 filters, and he was going to show me all of them while these people were freezing to death. I mean, he's nothing if not carried away with his work. I am too, so he's just great to work with."

With *Explorers*, Dante and Hora perhaps faced the most difficult film production of their careers because of the unchangeable deadline set by Paramount Pictures eager to have the project be their big Summer '85 movie release. "I have to admit that I only had a semi-clue of what this film was about while I was making it," Hora notes only half in jest. "We had so little time on this picture that when we started shooting exteriors for the first half of the film, there were no drawings of what the inside of the spaceship seen at the end of the film was going to look like. I saw those later. On location we just kept saying, 'Oh, January is coming and we're going to be in the spaceship,' but we didn't know what that was going to look like."

While uncertainty played an important factor in the making of *Explorers*, one aspect of Hora's life has almost always been certain—his desire to be a cameraman. "There was some indecisiveness around the 6th grade," he admits, "when I wasn't sure if I wanted to be a comedian, a cameraman, a nuclear physicist or an astronomer, but by the 8th grade I had set in my mind that I was going to USC film school."

Born and raised in Pasadena, California, the 45-year-old Hora set his sights early and in junior high borrowed his father's 8mm camera to start making films with his friends. At first he started with simple travelogs but, as he grew older, so did his ambitions. One of the films, he recalls, was called *The Mad Monk*. "It was about an insane monk in Mexico who murders everybody and walls them up in a monastery," he explained. "We were about fifteen or so at the time, but it didn't work out because everybody just yelled at each other."

After a brief stint at Pasadena City College, Hora transferred to the USC film school where he was a contemporary of Gary Kurtz and visual effects supervisor David Dryer (*Never Say Never Again*, *Blade Runner*). There, Hora not only got the chance to "eat, breathe and sleep film," but also the opportunity to write a script for director Fred Zinnemann.

"It was not a regular commercial film, but rather one done half with the unions, half with industry people and half with students. It was an experiment, it starred Richard Widmark and

Whit Bissell and it was called *Off the Highway*, based on a short story by Ira Wolford. Everybody submitted scripts and they took mine and one by Michael Neiman and they sort of rewrote it and put them together in a composite script that Zinnemann wanted and shot the film from."

Zinnemann was at Columbia at the time and after the film was done the studio offered Hora a job as a writer. "I guess they were trying to develop a stable of writers," Hora says, "but I just didn't want to be behind a typewriter all day long. That kind of discipline is not what I'm best at, so I decided to become a cameraman instead."

Following his graduation from USC in 1962, Hora worked briefly on some low budget films that were never actually completed, and then started working as a camera assistant for a commercial company called John Urie and Associates, a company he says was to commercials what Roger Corman's New World Pictures was to films.

"It was a real freewheeling sort of place. John Urie had the concept that there was talent on every street corner, and all you

Opposite: Ethan Hawke and River Phoenix in their basement laboratory with a mysterious "bubble." **Below:** The spacecraft "Thunder Road" runs afoul of the Sheriff's Department. (ILM composites)





Ethan Hawke contemplates the heavens in a beautiful night effect shot.

had to do was go down to the bus stop and you could find yourself a cameraman, a director or whatever. Strangely, he had a talent so that he was right about 50 percent of the time, which is an awfully high percentage for just going to the bus stop. He only paid a certain amount and then when you got too big for his britches, he just let you go and went to the bus stop and got somebody else."

When Urie closed down some seven years later, Hora had earned the title of director of photography after which he got his first feature, *Big Mo* (later retitled *Maurie*).

Big Mo did not prove to be a major hit ("Literally nobody went to see it"), but it did help Hora land the DP assignment on *The Further Adventures of The Wilderness Family* and then a two-part film made for the *Wonderful World of Disney* series entitled, *Strange Companions*. Based on his work in both of those films, Dante and his producer, Mike Finnell, decided to hire Hora for their breakthrough film, *The Howling*.

Following the success of *The Howling*, Hora shot *Liar's Moon*, before reuniting with Dante for his segment of *Twilight Zone—The Movie*, then *Gremlins* and now *Explorers*.

Instead of beginning in "your own backyard", *Explorers* actually starts with the dream that teaches Ben and his friends how to build a special forcefield that can contain a spaceship. After numerous adventures on earth, the boys finally get their ship into orbit and into deep space, where they meet the rather offbeat creatures that

sent the dream. The film is very much a Tom Swift adventure in space, a tale of kids who one day set out to build a spaceship which, instead of being imaginary, turns out to be real.

For *Explorers*, Hora had to shoot and light a wide variety of environments, from exterior locations to sets depicting such earth-bound locales as a dry creekbed and a junkyard, and such space-bound places as the interior of a vast alien spaceship. In addition, he had to film the aliens themselves, makeup creations by Rob Bottin (*The Howling*), and he was aided in his tasks by operator Eric Anderson, assistant Norm Cattell, key grip Pete Wagner and gaffer Randy Glass. The film also features computer dream sequences created by Omnibus Computer Graphics, and visual effects by Lucasfilm's Industrial Light and Magic (ILM), but those sequences were essentially handled separately by the two companies.

While exteriors of the film were shot on location in Petaluma, California to capture a sense of autumn ("I used a warm 85-C filter in addition to the normal 85, and put blue gel over the fill lights"), a large part of the film was shot on sound stages at Paramount Pictures. There, numerous sets were created and built by production designer Robert Boyle.

Boyle, who has earned Academy Award nominations for his work in such films as *Fiddler on the Roof* and Alfred Hitchcock's *North By Northwest*, also worked on Hitchcock's *Saboteur*, *The Birds* and *Shadow of a Doubt*, and Jack Arnold's *It Came From Outer Space*. Among the many sets that he constructed for *Explorers* were several key earthbound locations like a dry river bed, the backyard behind one of the boy's houses, and a rundown junkyard – all built primarily because child labor laws do not allow young actors to work at night. Since a large part of the film occurs after sunset, the sets were constructed so the night scenes could be shot during the day.

The three sets were actually all built together on one sound

stage. The backyard was on top of a two-level set and sloped down to the dry creek bed. Then, tucked up underneath the backyard was the junkyard – the source for the parts the boys use to build their spaceship, The Thunder Road. Real vegetation and junk were brought in to make the individual sets look as realistic as possible. Then Hora tried to bring them to life even further, especially the junkyard set.

"On the junkyard I decided we should put some mood into it so I imagined it after maybe a thundershower had passed nearby," he explains. "We added some lightning flashes, using the arcs so that they looked like they were occurring in the next town over. The place was also damp and dripping like there had been a storm, but there wasn't any rain. I just thought that was a nice sort of mood to put into it."

After the boys raid the junkyard, they build their spaceship. Christened the Thunder Road, the completed ship is first seen standing by the river bed at dawn. Since the exact nature of the shot was not decided until after the location filming was completed, Hora had to recreate the rising sun on the sound stage. The only problem was that the creek bed set was designed for night time photography, not early morning.

"At first, I didn't know what we were going to do because it's very hard to do an interior daytime shot and make it look convincing in a film that has exterior daytime scenes. So, I went to sleep on it and although I didn't dream about lighting that night, I woke up the next morning and as I went to make coffee I suddenly knew how to do the shot.

"Basically it involved going for broke and putting everything into it. In the scene, it's dawn and we dolly in on the Thunder Road as the sun is rising behind it. So, as we moved in on the ship we had a light behind it hidden in the bushes. This light was on a dimmer and lined up to shine right into the lens to imitate

the rising sun. I had a special star filter that my assistant and I made up of vaseline to give us an erratic burst."

To further enhance the effect, Hora also positioned another light off to the side as a high-light so that as the camera moved in, this second light would reflect off the handle of the Thunder Road and make another starburst. In addition, because the set did not have overhead dimmers to bring up the lighting overall as the sun came up, Hora decided to make an f-stop change on the camera.

"We first did a one-half stop change, and then a one stop change – it seemed that the more we did, the better. Overall, then, we had a light change created by opening the f-stop; the sun coming up by virtue of dollying in on the ship as we brought a light up behind on a dimmer to make a starburst that came off the background of the hills; and, as we moved into the final position, we had an additional inky that flared off a piece of chrome on the Thunder Road to create another star. When it all came together, it looked just perfect."

While the earthbound sets presented their own difficulties, they required fairly straightforward lighting compared to the more bizarre alien sets Boyle designed for the film. One of the reasons they were difficult to light was, given a short pre-production schedule of three months, the designs were not determined until the last possible moment, leaving the set builders very little time to complete their work.

Further complicating the lighting was the fact that designs for the alien ship interiors were based on a rather unusual notion – the inside of a car's engine. The idea came to Boyle because the exterior of the ship was originally going to be a takeoff on a dragster, and was to reflect the structuring and detail that such an ultra-fast sports car has. While ultimately the exterior of the ship was changed for practical reasons



The "Thunder Road," a spacecraft made of junkyard materials, appears properly impressive when dramatized by imaginative lighting.



Amanda Peterson is astonished when her admirer, Hawke, appears outside her upstairs window in a bubble. (ILM composite)

(ILM would have had a very difficult time filming the ship blue-screen), Boyle continued with the idea of an automobile for the interior, and began cutting up carburetors of several engines for reference and then duplicating the look of pipes and gaskets and valves. The result was sets that looked nothing like any spaceship ever seen on the screen before, and that captured the goofy nature of the aliens who are later seen inhabiting them.

The alien sets were constructed on sound stages 8 and 16. On 8, Boyle designed corridors and a long series of tunnels that the Thunder Road travels through for decontamination once it arrives in the ship. This set was later rearranged to become the dream sending room, the source of the boys' dreams. While this set was quite large, with walls that towered 15-20 feet in the air, the really huge set was on sound stage 16. Nicknamed the Funhouse, it had a long spiraling slide that the boys accidentally fall down and get whisked away to another part of the ship. All of the alien interiors were painted in silver and blacks, and often had steam and dry ice seas floating amid walls

that towered some thirty feet above the kids.

"Bob's work was a major contribution to the film," Hora says. "Nobody, including Joe, had any time to conceive the sets because we were shooting already. So we didn't know what the spaceship was going to be like. We sort of decided the color scheme from Bob's sketches, but we just didn't know what the sets would really look like until they were finished. Bob was absolutely remarkable and, with the schedule he was keeping, he was practically sleeping at the studio.

"The sets had very much of a carnival feel, especially the Funhouse on stage 16," he continues, "so we approached it as sort of a Disneyland of rides and slides and secret passageways. Joe kept pushing for certain oddball colors in the spaceship so we used a lot of purples, pinks, lavenders and greens. It just so happened that the way the set was finished with a metallic-surface looking paint, you could get a lot of big areas lit rather simply by lighting a panel of the set and just letting the metal reflect it.

"The colors we ended up using were really very strong and

they were much like the ones used in that old Stanley Kramer movie, *Five Thousand Fingers of Dr. T.*, which was a fantasy with a lot of strong colors. It's funny but after we completed the filming on the sets and were doing blue screen work up at ILM, we screened *This Island Earth*. It is one of Joe's favorite movies and the kids had never seen it. Well, there were also some of the same exact colors that we had used. It was just amazing how many colors in it were similar to ones that we had used."

Besides determining the colors, Hora also had to find ways to film some of the more outlandish areas of the set. Perhaps the most unusual section was the slide in the Funhouse. "It was open at the top and I could never quite figure out what its real function might be. Bob Boyle said it was an oil delivery tube to the pan because he had conceived of the sets as the inside of an engine. We used it as if it were two different slides and we lit it two different ways." To film it, a camera operator holding an Arriflex was sent backwards down the slide so he could face upwards and film the kids coming down right after him.

Besides the outlandish nature of the sets themselves, with their wild, gasket-like circles and hanging pipe and steam lines, Hora further enhanced the funhouse nature of the film with the use of a curved mirror. The first time he used the effect was actually in the junkyard seen earlier in the film. "The shot begins as you see a distorted image. All of a sudden a kid appears out of nowhere and then he splits and there are two of them and then you realize that you are looking at a mirror that is lying on it's side. Then the real boy walks by and explores the yard.

"Well, inside the spaceship, I took the same mirror and laid it down in a big corridor so it distorted the spaceship enough to make it look like a completely different part of the ship. Circles turned into squares and things were stretched out. Then I took a regular mirror that we got out of the men's room and we put it into

one area of the curved mirror so that section would reflect without distortion. When the boy walked into the scene, he looked normal, but around him was a completely distorted view of the set, suggesting that he was in a completely different section of the ship. It was sort of a cheap optical done with mirrors. I like it because it also thematically related back to what was in the junkyard.” Hora wanted to try similar tricks for other parts of the set, but there wasn’t time to do further experimentation.

Perhaps the most complicated of all the sets was the alien control room (a redress of the Funhouse set) because it had to look like a veritable video sea of floating images. In the background of many of the shots is a large rear-projection screen that was built into the set while, in the foreground, smaller images float hologram-like in mid air – a trick created by the use of a ghost glass in front of the camera that was fed with images from a projector to the side.

“This movie was a voyage of discovery in more ways than one,” Dante adds, “mainly because there was so little time to actually think about things we wanted to do. We would have an idea and have to go with it. There really wasn’t time to debate it, and sometimes it wouldn’t even get disseminated widely enough for everybody to know what we were doing until we suddenly started to do it. But I would say that if it wasn’t for John and his ghost glass, for instance – that we used when we were shooting all of the television screens and stuff – we would have had to spend zillions of dollars in grainy, crummy opticals that never would have given us what we got on the set.”

The images seen in this sequence were actually a compilation made by visual effects coordinator Ralph Winter of clips from various films, television series and commercials that were transferred from their various formats onto video and then back to film for the projection systems. The clips in all different formats, from 35mm and

16mm to VHS 2-inch and 1-inch, were then put on 1-inch video using a 30 frame playback system. The clips were then re-photographed onto film for better quality and used in rear-projection and side-projection systems.

“To distort the images so they would look like they were being received from a source far away, I got a variable squeeze anamorphic lens I had that was from the 50s and 60s,” Hora adds. “They used them in projection booths and it will let you use anything from 1:33 to 2:35 and just turn it on and hold it out. So we used that lens on the process projectors and turned it at odd angles to stretch it diagonally and make the whole picture sort of a parallelogram or sometimes a trapezoid in shape. We used that on both the rear and on the ghost glass images so we could twist them different ways. Also, we used gels to throw them off color, so there may be a yellow image behind and a blue image in front and that combination of stuff worked pretty well.”

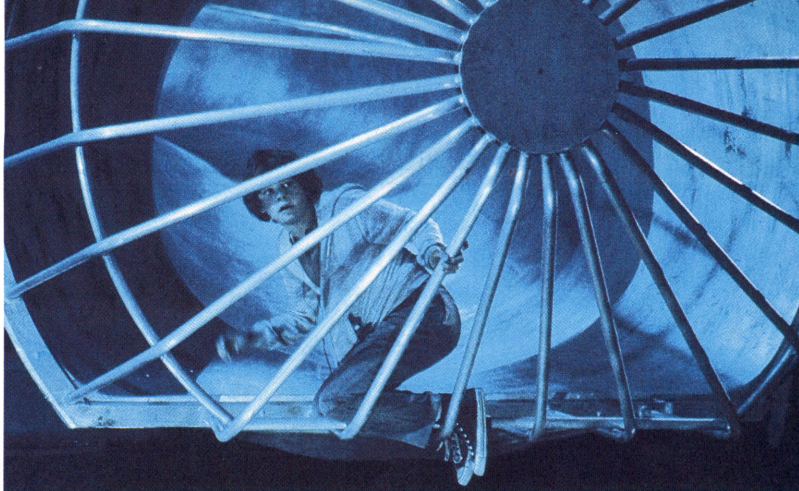
During the actual transfer process itself Dante was also able to twique the clips using a Fox CinemaScope lens owned by Hora

that could rotate the image off position up to 45 degrees in either direction. “And to try to keep the television hologram look to it, when we made the film for the projection, we photographed color off a color monitor which of course has little dots, and then we photographed the black and white footage off a black and white monitor so you would see the scanning lines clearly. I think that helps some because the scanning lines are prominent enough that you definitely feel like you are watching a television image. It takes some of the curse off the process screen.”

Another distortion that occurred was quite unexpected. “In the original transfer of some of the clips from movie film, which is 24 frames, to video, which is 30, they sped up the action so that when they went from video back to the final projection film, it would all be correct. But the computer did not do it evenly, and at 30 frames it looked smooth, but when we went back to 24, we suddenly realized that things were jerking along, and it would skip a couple of frames every once in a while, and then it would be

John Hora.





Presson has just taken a long slide inside the alien ship.

smooth and then everything would jump. It was an accidental thing, but we finally decided we liked it because it made the images a little more bizarre.”

In addition to having to shoot the bizarre alien sets, Hora also had to film the aliens themselves, creatures created by Rob Bottin. Bottin, who had worked with Dante previously on *The Howling* and the *Twilight Zone* segment, also did the makeup effects in John Carpenter’s *The Thing* and Ridley Scott’s upcoming *Legends*. For *Explorers*, he created Wak, Neek and their father. More specifically, Wak is a giant green being with a smiling face, antennae and two eyes on stalks. Neek, on the other hand, is a bubble gum pink with the Valley girl look of long green hair and a stylish dinner jacket. The father, who comes to take his misbehaving kids home (they took his sports car ship without permission) resembles a middle aged Wak with beard stubble, a beer belly and a mean disposition.

The creatures were actually actors Bob Picardo (as Wak and the father) and Lesley Rickert (Neek) wearing elaborate foam rubber suits with mechanically operated heads that weigh up to 60 pounds. The creatures proved to be difficult to light – a problem that was aggravated by the fact that the tight production schedule did not allow time for extensive lighting tests.

“You always have trouble with rubber because you’re working at cross purposes,” Hora comments. “One thing is that if you really see it, you see the rubber,

which isn’t any good. If on the other hand you hide too much of it, then you just don’t see enough. For the creature to play and for all the sculpturing and artistry to show, you’ve got to have enough light to see it, but you don’t want it to ever look like a rubber mask.”

The key to the lighting of these creatures was to use a fill light from below to fill in the area of the face between the actors’ real mouths and the tall eye stalks that tended to overshadow the area in between. Sometimes Hora also had to take into account elements of the set that affected the look of the aliens. For instance, a large silver chair that resembles a love seat tended to pick up the color of the lights and reflect them onto the aliens, flattening their own colors out, especially on Neek.

“The light would just bounce off the silver and come back on Neek and flatten her out. We finally had to line all the areas of the silver chair that didn’t show on camera with black cloth to kill the reflection.”

Throughout the production, two different kinds of filmstock were used – Eastman 5247 for the exteriors and all of the interior effects plates shot by ILM (anything blue screen must be done on 47), and 5294 for the remaining interior footage. While the filmstocks numbered just two, the number of cameras used on the film did not.

As Hora explains, “On *Explorers* we ended up using the ILM Empireflex and the high speed Empireflex, the VistaVision

VV3, which is a Mitchell Vista-Vision camera owned, I believe, by Paramount, and the compact Butterfly VistaVision camera – all for the effects work. Then, we used the Ultracam for all of our location stuff up in Petaluma, a Moviecam which will shoot sync sound backwards (used for most of the stuff in the flying of the Thunder Road and for a reverse gravity sequence that was cut from the film) an XR-35, a Panavision Golden Panaflex, a Mitchell Mark II, an Arri 2C, an Arri 3, an Arri BL, a Steadicam, and a CM3 35mm Eclair. By the time we were finished, we were within four or five cameras of using every camera that is currently available.

“There were specific reasons for each,” he adds. “A lot of it was just me. I always figure that for each shot there is a perfect camera. For instance, we used the Mark II that had been steaditested and was satisfactory for ILM for almost all of our 4-perf effects work. And we used the Empireflex or the high speed Empireflex for all the high speed stuff. There are a lot of inconveniences with it. First of all, the blimped, quiet Empireflex is about the noisiest camera you’ve ever heard on the stage. It’s just almost impossible to record any dialogue, especially if you are working close to people. That one runs with a belt drive and when it broke down – which happened several times because we were sharing it with the *Cocoon* production – we had to substitute the high speed Empireflex which was gear driven and *really* noisy. I mean, it was unbelievably noisy. So you don’t have any good dialogue recorded usually with it.”

For one sequence showing the kids lifting off in a full-size Thunder Road, Hora also used the camera system called the Shakicam. “We might have actually been able to do the same thing with the Steadicam except that this way the operator didn’t have to wear the camera because it was on a boom that could be moved around. Ray Tostados, who built it, has several different rigs that he calls Shakicams, which are all mechanically simple. The one we



used involved a lever arm system that allowed the camera to just float constantly. It allowed us to effectively have a free-floating, handheld camera without the operator having to hold the weight. We could move in and out, up and down, anyway we wanted and keep the ship in motion. It creates a remarkable feeling of flying. When the Thunder Road first lifts off, there is a cut to the kids inside where the camera is just moving downwards, and you really feel they are flying up past the camera. Even knowing how the shot was done it is still very convincing."

Despite the large number of cameras used for *Explorers*, Hora says he basically prefers "the big, old Mitchell kind of camera like the PSR or the XR-35. They have the classic Mitchell NC movement, which are the steadiest movements. The cameras also have the lens hard-mounted to the aperture gate, meaning that there is metal between the film plane

and the lens mount. Nothing can shift in there. In the newer cameras, the movement tends to be isolated on rubber for sound reasons, and there is always a chance that the flange to the film plane distance may vary because of the condition of the camera or abuse or so forth. It's sort of a subtle problem, but I don't mind the large camera. Most of what I shoot is on a gear head on a dolly anyway, so the fact that the camera weighs 100 pounds instead of 40 doesn't make that much difference."

Explorers marks the fourth time that Hora has worked with Joe Dante, a relationship that he finds rewarding. "Yeah, well, he hires me," Hora quips. "Actually, Joe is a lot of fun and he accepts a lot of input which I think is a good way to work. His films always evolve as they go along. Sometimes, I'll suggest something and if I really believe in it and he doesn't go along with it at first, I just keep suggesting it as subtly as possible

until he either shuts me down or decides to go for it.

"I would love to do a turn of the century period piece," Hora adds in retrospect, "or even a Western, or the 1930s or a film like *A Passage To India*, a historical film. "I've always wanted to do a Roman spectacle and a big Western. I guess I've done a space movie although I'm not quite sure *Explorers* qualifies because so much of it is set on earth. The disappointing thing about a space movie is that you don't get to shoot the space stuff - that's all ILM. You don't even get to shoot out the window because that's them too with their blue screen. You really pretty well just shoot the cutaways and the walls. The part that is the most fun - flying the spaceships - you don't get to do." △

Adam Eisenberg is a Los Angeles free lance writer, whose articles appear in Cinefex magazine and in The Los Angeles Times.

Convincing cityscapes lend reality to the fantasy of *Explorers*. (ILM composite)



Aerial and Other Action for

EXPLORERS

by George Turner

When a production's visual needs go beyond the work done by the nominal director of photography, an SOS is beamed to someone to whom unusual photographic assignments are daily bread. One of those whom filmmakers depend upon to untangle knotty production problems is Jack Cooperman, ASC. In a matter of months Cooperman may photograph miniature action for the likes of *War Games* and *Blue Thunder*, shoot aerial scenes for *Indiana Jones and the Temple of Doom*, and go under the sea for *An Officer and a Gentleman*, *Raise the Titanic* and *The Golden Seal*.

One of his more unusual assignments of the past year was as second unit director/director of photography on *Explorers*. It was his responsibility to direct and shoot all sequences not done by the director, Joe Dante, and the director of photography, John Hora, as well as make background plates which would be used by Industrial Light and Magic in making matte shots and the blue screen composites. He was contacted in late August, 1984, by Hora, production manager Tom Jacobson, and producer Mike Fin-

nell, to discuss the project. He met with Dante in early September for further discussions and found the director "... imaginative, direct and easy to communicate with.

"He was supportive of my concepts," Cooperman added. "He left some areas open for interpretation and allowed for embellishments. I was in before principal photography began and continued to work while it was under way. This was an important factor, because it allowed me to work with Joe, production designer Robert Boyle, and other key people. We were able to avoid boxing each other into holes.

"Although the production was being shot in 35mm flat for 1:85 to 1 projection, our work was to be done in VistaVision because ILM uses the larger format in their work. Some scenes were intended for use both as blue screen backings for interiors of the boys' travel craft and for pure POV shots, which Joe would pick and have 35mm opticals made of them. This is an expensive process, as it means a 90° rotation as well as reduction and loss of a generation.

To save this extra step, Cooperman worked out a plan to shoot conventional 35mm and VistaVision at the same time. "It meant making a dual camera rig," Cooperman explained, but it was well worth it. "This way, film editor Tina Hirsch could run them all on a Moviola and give Joe immediate ability to select the positives of the scenes for ILM to use. We figured everything very closely - almost every plate ended up in the film. The majority of our work, say 95%, was night shooting."

Cooperman went pre-location scouting, mostly in the vicinity of Petaluma, California, near Oakland, where the story is set. "I shot some hand-held material that Joe could evaluate," Cooperman recalled. When actual photography commenced, special equipment was required.

"Our VistaVision camera was Paramount's "Butterfly" model. We used it instead of one of ILM's Empire Cameras because it could take magazines of up to 1000 feet capacity, while the ILM models use 400-ft. loads. We changed the lens mount to accommodate Nikon speed lenses which we needed for the night shots. It

originally had Leitz (Leica) lenses, which are excellent, but we had to have the larger aperture lenses. ILM installed the Nikon mount.

"The other camera I selected was an Arri III with a BNC mount designed by JAR Enterprises and equipped with Canon speed lenses. Both cameras were equipped with video as well as remote speed controls and remote aperture controls for both lenses. Initially we were going to videotape what we had shot, but when we were in production it proved not to be as necessary as we had contemplated initially. We worked very closely on the matte compositions with Don Dow, of ILM; it was important for him to know what we were doing, and it wasn't always possible for him to be there. By working with detailed storyboards and rehearsals we didn't have to resort to video replays."

It was necessary for Cooperman to design equivalent focal length lens charts for the two camera setups. "First I charted the Academy aperture vs. VistaVision apertures and placed them opposite one another," Cooperman noted. "Second, I figured the lens angles, 35mm vs. VistaVision – they differ. Based on these formulae, I came up with what I felt would be most practical. This determined which lens to use on each camera, both of which sometimes were running at both below and above normal speed and in various types of aircraft, whether fixed wing or helicopter."

Two different aerial mounts were needed for helicopter shots. "Certain shots were made with a Tyler major mount which we adapted for the twin camera rig. This made the unit heavier than would normally be used for a helicopter, hence it was necessary to remove all excess weight from the craft. The other mount shot straight ahead. The basic platform was a modification of a belly-mount system designed by Tom Patterson. With this we were able to use both cameras if necessary and we could control the attitude in flight.

"Once I had gone over the script and storyboards extensively and worked out the apparent speeds needed for various shots, I determined that it would be best to use both fixed wing and helicopter type aircraft. My choice of photo pilot was Art Scholl. We had worked together numerous times. I've worked with many of the industry's finest pilots, but none have Art's background both as a helicopter pilot and a low-level pilot. Bill Green was our UPM first assistant director, and my assistant cameraman – on this and several previous pictures – was Wayne Baker, who is knowledgeable in the style of production in which I like to function as regards speed and equipment, including aerial mounts and video."

The original plan was to do most of the shooting in the evenings. "Tests showed that the best results – the way to achieve a visual quality in keeping with production photography supplied by John Hora – was to shoot in the three or four minutes available to us at the end of the 'magic hour,'" Cooperman said. "This gave us ambient light and detail on the buildings, yet we could see lights and still achieve a dark sky. We found that early morning photography would not work for these shots because not enough city lights were turned on at that hour

to match the evening shots. However, we used the dawn period to shoot sunrise shots and scenes in which the camera was looking straight down for a semi-surrealistic dream sequence.

"The 'magic hour' shots required a lot of preparation because of the need to shoot all sequences during about four minutes per day. We had to use every moment of our time. It meant exact pre-knowledge and scheduling of our production plans and all the variables and alternatives available, taking into consideration weather, noise abatement restrictions, logistics of aircraft choice, and so on.

The actual shooting schedule for the second unit was a three week period in October. Everything was finished on schedule.

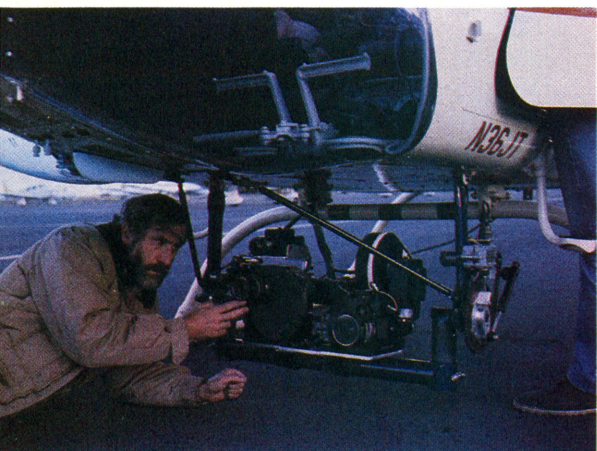
Cooperman prefers to work from the outside of the helicopter rather than seated inside. This method proved more than usually exciting in some scenes which simulate the view from the aircraft as it comes straight down into a river at the climax of its return flight.

"Art had to go over some powerlines, then there was the river, and on the bank was a two story restaurant. I was shooting forward from the outside mount. Once over the river, Art had to roll the helicopter sharply to the right, making my door, in essence, a

Opposite page:
A drive-in theater in Burbank, night-lighted for some spectacular aerial effects.

Below:
Shooting from helicopter side mount.





Cooperman with two-camera helicopter belly mount. Below One of several comparative charts prepared by Cooperman to aid in matching VistaVision and standard 35mm shots.

bomb bay. At that point the helicopter would slide down on its side toward the river, with the mount and me on the bottom. At approximately 10 to 15 feet above the water, Art would flare the helicopter and we'd do it all again at a different camera speed! People from the second floor of the restaurant were looking *down* at us!

"We lit areas to match the shots of the spacecraft crash and the boys swimming ashore. For this shot it was important in pre-planning that Bill Green was able to control all vehicle, pedestrian and boat traffic in the area while we were filming. Even aside from immediate danger, we were afraid that people driving in the vicinity might get to watching us and have accidents on the road."

Night scenes at the Pickwick Drive-In Theater in Burbank

were also filmed. These were used in a sequence wherein the spacecraft comes straight toward the viewing audience from the screen area and enters the snack bar.

"We made the shots at night with the assistance of 12 Mole-Richardson Brute arcs, some of which were on scissors lifts, and various smaller light units," Cooperman recalled. "Joe Dante staged a typical 1950s sci-fi movie which supposedly was playing at the drive-in and I decided to simulate the colors and production patters reflected on the fronts of the cars from the screen. We created a new front on the existing projection booth so we could also simulate the light source of the film supposedly being viewed.

"The sequence involved the use of twin mount cameras on the Tyler mount as well as a twin camera rig on a Chapman Crane along with matte shots that were filmed from both a 40-foot high parallel and ground level.

"We had a moment of concern when Ralph Winters, the visual effects coordinator said on the day before this shoot that the matte shots would need an f.11 stop with 5247 film stock, which has an exposure index of 100. The shots entailed seeing the entire theater, including the projection booth, snack bars and all the cars! After an intense discussion about the equipment necessary and the

power requirements, which would total about 10% of the output of Hoover Dam, I was able to communicate an alternate method of matting within the bounds of the lighting we could achieve by saturating Kodak 5294 film and placing a hard matte eight feet away from the camera.

"We had extras in the cars to fill up the parking lots. The cars directly under the path of the helicopter contained mannikins instead of real people. All members of the cast and crew were gathered and everything that would happen was explained to them in detail. The drive-in was swept and washed down carefully so that there would be no rocks or debris that might go flying due to the proximity of the helicopter. The snack bar and other details were altered to match the set on the stage at Paramount.

"We shot the drive-in sequence in two nights. On the first night we did the helicopter shots first thing because of the noise factor. Then we did the high angle matte shots and wrapped on schedule. On the second night we did the Chapman crane shots and the reverse angles for the matte shots. Everything was done with great speed because we were on the edge of rain showers both nights. We finished the last shot on the second day just as the rain came down.

"Another interesting sequence concerns the return of the spacecraft, with lights going on as the neighborhood is roused. Part of this I shot in Petaluma. Another part, which has dogs barking as they become aware of the flying craft, was done in West Los Angeles. Joe had hoped to be able to do this because, as he said, 'Using dogs as principal talent is very enjoyable because they don't require motor homes, dressing rooms and other cultural amenities necessary for other performers.' The location manager found an alley that had the look of a third world back street - rutted, uneven, unpaved. Several truckloads of decomposed granite were brought in and graded to make it level enough for

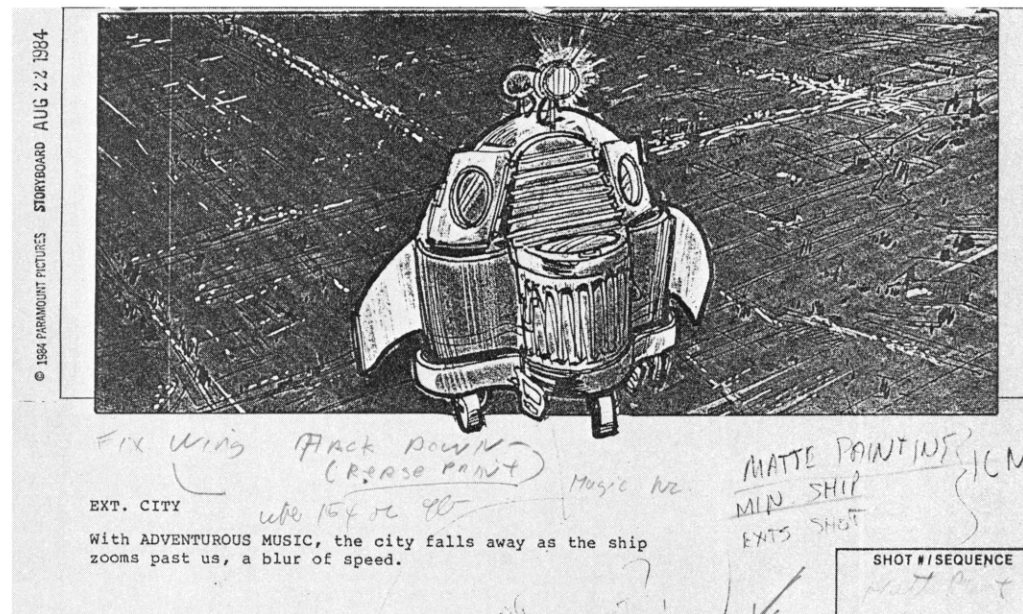
CAMERA LENS ANGLES

35MM Academy Aperture .868" x .631"			Vista Vision Camera Aperture 1.485" x .991"		
Lens Focal Length	Horizontal Angle	Vertical Angle	Lens Focal Length	Horizontal Angle	Vertical Angle
20MM	57.7°	43.6°	28MM	67.9°	48.4°
			35MM	56.6°	39.5°
25MM	47.5°	35.5°	40MM	50.5°	34.9°
30MM	40.3°	29.9°			
35MM	34.9°	25.7°	50MM	41.3°	28.3°
40MM	30.8°	22.6°			
50MM	24.8°	18.2°	75MM	28.2°	19.1°
			85MM	25.0°	16.8°
			100MM	21.4°	14.3°
100MM	12.5°	9.1°			

us to lay down some track for the Titan crane. The crane became the floating instrument.

"One of the responsibilities when shooting additional photography on any film is to match and complement the photography of the first unit director of photography. In this instance I also felt it necessary to put in some of the humor that Joe Dante might have used had he been directing these scenes. The idea was to use a good cross-section of dog types and have them react in different ways to the spacecraft moving slowly over them. We had six dogs: an Irish Setter, two vari-sized street dogs, a big St. Bernard, and, finally, a tiny white Griffon sleeping in a hammock." Each of the dogs reacted differently, each has a different type of bark ranging from the yipping of the small dogs to the basso "woof" of the St. Bernard, and the sequence is capped as the little dog asleep in the hammock, almost oblivious to everything, wakes at the very last moment. "Joe loved it." Cooperman said.

Other shots covered by



the additional photography unit included cloud plates, cabin shots for a sequence with Dick Miller flying a police aircraft, and air-to-air shots of the police helicopter searching for the UFO.

To get the effect of certain maneuvers it was necessary to photograph dives to be reversed, and for the effect of acceleration

the cranking speeds were changed during the shots. Cooperman, as a keen student of classic techniques, was particularly pleased to have an opportunity to utilize some methods that once were stock-in-trade of the early cinematographers.

"It was," Cooperman recalled with satisfaction, "a very enjoyable assignment." △

One of many storyboard sketches used in planning composite shots.

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Nine and One-Half Weeks, a Love Story

By Lear Levin

Peter Biziou is director of photography for *Nine and One-Half Weeks*. A wiry Englishman with a perpetual smile on his face and a hair style reminiscent of Ben Franklin, he darts around the camera and the set trailing an energy field which is contagious throughout the crew. Although his size is diminutive, his credentials are impressive: *Time Bandits*, *The Wall* and *Another Country*, winner of the top prize for cinematography at Cannes in 1984. The son of a special effects cameraman, Peter Biziou not only learned how to spin the wheels of a gear head and where to place the lights in his early days, but had the good fortune to ground his film education in that technical bed rock of special visual effects, where the difference between two frames per second and a fraction of a stop can make you look like either a hero or a bum.

Nine and One-Half Weeks, to be released by MGM/UA, stars Mickey Rourke and Kim Basinger.

The production of *Nine and One-Half Weeks* presented Biziou with more than the normal spate of challenges usually inherent in a \$16 million feature. Much of this was related to the fact that the film reveals an intimate relationship between a man and a woman who play out sexual fantasies which would make the average street walker blush. Only days before principal photography was to begin, the film was halted when its backers, Tri-Star, got cold feet over its hot story line. Struggling valiantly, Adrian Lyne and his team were able to gain new financing and re-launch the project with only the loss of a week and a half's time. Lyne now has his third feature in the can but his stomach has no doubt aged 110 years. Given such a torrid framework for the plot, the project in the hands of lesser filmmakers could easily have degenerated into fodder for a peep show palace. However, under the directorial guidance of Lyne who brought life and elan to *Flashdance*, an intensely aesthetic ap-

proach has been taken to the subject matter in *Nine and One-Half Weeks*. "Peter's sensitive lighting and astounding knowledge of the camera," says the director, "will bring an eloquent and arresting portrait of the couple's bizarre liaison before the public . . . a portrait," Lyne says, "which we feel shall appeal to everyone's interests save their prurient ones . . . at least I hope the hell it does."

Since Adrian Lyne is regarded as one of the finest visual directors to have ever done TV commercials, and a man who is used to operating his own camera, the suggestion that he might try to steam roll any director of photography is not without foundation. Biziou, behind his perennial smile, casts such thoughts aside, saying, "We came to an understanding early on. It was one predicated on philosophy. Adrian demands the absolute best from each frame of film we run through the camera. It's his credo. He rarely compromises, and I unequivocally share his desire, no matter what the requirements." Looking around, his eyes twinkling, Biziou went on, "For instance, Adrian selected a completely natural, available light approach for his film. I too, was fond of such a look for this story." Then, glancing at two arcs smoking nearby, four maxi brutes, and five nine-light fays pouring onto the set, he continued with a wink, "I dedicated myself to giving it to him." After a pause he explained that with all that wattage burning it does seem anomalous that they should be going for a natural look. But Biziou explains that it is all pumped through great quantities of Lee 216 diffusion paper, and bounced around with polystyrene board, so it isn't long before the needle on his meter retreats down to around 2.8 on normally rated 5294 stock. "I suppose," Biziou says, "if I turned to some perfect stranger, one of those chaps behind the police barricades, for instance, and declared that our lighting is totally available, he would reply, 'you mean every damn light in New York City?'"

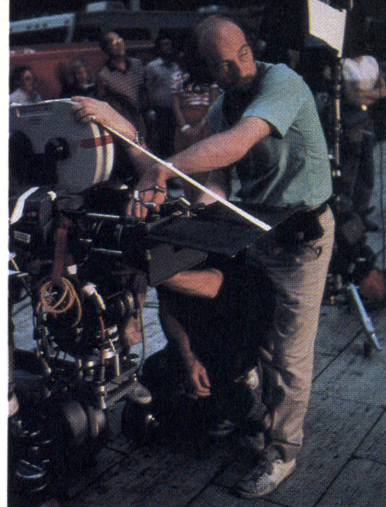
Both the cameraman and the director also agree on the use of smoke on every shot whether indoors or out. "White smoke cookies are fine for the interiors," says propman Mark Peltzer. "We tried blue for a while but we couldn't live with the nausea that resulted. With the white," he chuckles, "all you get is black lung ... a small price to pay for dailies that look as good as Peter's." For exteriors Mark said that several Rosco foggers are sufficient and filtered masks are always available for crew members who prefer them.

The soft haze produced by the smoke is augmented by Biziou's use of Mitchell glass diffusion in front of his Panavision lenses. Craig Haagensen, the camera operator, says that every fog, double fog, low con, net, glass and acrylic diffusion they could get their hands on was tested. The final analysis was that the old Mitchells held onto color and softened details imperceptibly enough to create the mood the story demanded. These glass diffusers are expertly crafted by Pancro Mirror of Glendale, California for the Mitchell Camera Company. Craig says the fogs and low cons desaturated the color and since they had opted for smoke, such an effect would be redundant. Peter likes to keep vivid colors down in accordance with Adrian's wishes, then place a single patch of color in the scene using wardrobe, flowers, or even a brightly hued towel as an accent. "A colorful flower vase in an otherwise monochromatic, hi-tech looking room, can be smashing," says Craig, picking up a little Celtic flavor in his speech pattern.

Craig confessed that the director who was so accustomed to operating his own camera over the years has grown fond of picking off numerous shots himself with a second camera. "Both Peter and I have such great respect for him that we don't feel put upon. Usually he positions himself behind a 10:1 zoom where he can cover the action or pan around the set framing interesting composi-

tions that seem to come so easily to his eye. The danger of such a practice, warns Haagensen, is that operating excellence is sometimes compromised when Adrian becomes totally immersed in performance, as he should, rather than following movement. "Of course if you've earned the right to spend money by making *Flashdance* I guess you can shoot as many takes as you please in order to get the film you wish. Peter however, is always decisive and an eternal gentleman," Craig says, "but the crew loves someone who can make up his mind and are pleased with his leadership." Conflicts between Adrian and Peter are rare but when they have happened they've usually been brought on by physical exhaustion. "Our basic day is 14 hours but by the time dailies are over it's at least 16 hours," Craig says. "The only other run-ins have been trivial and have to do with framing. Adrian's years in TV have caused him to lean toward a center frame on compositions. Peter and I prefer to explore the full range of the 1:1.85 proportion. Since much of the furniture and the design of the locations are reflective of the Bauhaus School of design so popular in the 20's and 30's, they seem to want an off center feeling like the paintings of that time. Therefore, Peter at first was constantly nudging the frame right or left of the cross hairs. After a few days of dailies, however, we all fell into perfect harmony." Haagensen says that spontaneity is a key word around the set and that at almost any time Peter must be prepared to shoot at any point of the compass. "And then there have been times when the earth nearly shook because Adrian got to see the sun in a shot and everything had to be relegated to making the most of the spectacle. I suppose this too", says Craig, "is the result of Adrian's days in TV, but once again when those dailies come on the screen the snide remarks are washed away with the spent developer."

"Peter and I spend a lot of time making suggestions", says Craig, "because they're welcomed,



and few really have to do with framing. For instance, how close an actor directs his eye line toward the lens has a great bearing on the intensity projected in a scene. The height of the camera has an effect on the stature of a character and there are an infinite number of ways to move a camera. They all have a different effect on a scene and are points for discussion. Hand holding, for instance, can generate a nervous tension in a scene that can often be more effective than the smooth precision of a dolly move. A gyro adds a less abrasive effect to hand holding and a double gyro goes even further. We have all these tools on the set and are also considering Steadicam and the use of a Dynalens for some scenes."

Peter Biziou's experimental flair as well as his skill are also borne out by his gaffer, Jonathan Lumley. "Peter makes sure each foot candle is coming from the right place," he said. He can light comfortably with an entire catalogue of equipment, or as he did the other day, play with a set of Venetian blinds from sunrise to sunset, lighting a penthouse with daylight so cleverly that there was never a trace of inconsistency in the key illumination or its direction.

Lumley's eyes took on a sparkle that was not unlike that of Biziou, as he began to reflect on more of what he had recently observed. "He will use remarkably different devices to achieve a similar end," he said. "It is as if he wasn't content with the daily challenge of a mammoth feature to

Biziou and camera. Opposite page: Exterior night location, back cross keyed with brutes, smoke filling in background.



*Night rain effect
back cross lighted
by arc.*

keep his mind agile, he goes far beyond the call. For instance," Lumley said, "one day he will bounce an arc to achieve a north light effect, then he will create the same exact feeling with some simple projector bulbs through trace and into a white card on the following day." Lumley whispers discreetly, "only those who were there would ever know the difference. He blends light as a painter would mix pigment on his palette," the erudite gaffer said, "and like any great artist, I suppose he's never satisfied." Lumley went on to explain that Biziou's inventiveness was of particular interest to the crew. "Once he had me secure the type of tiny spot light you see lighting fashion dummies in Bloomingdale's window, bend a snoot around it made out of black wrap foil and use it for a key light, then later use it for a back light and bounce. Another time," Lumley says, "Peter devised what he calls his 'Micro Brute'. It contains 9 totally maneuverable 250 watt quartz projection bulbs in a metal frame similar to that used for a Mole 9 light fay. By using doors on each unit, or the entire light, you have enough power to bounce light an entire

apartment with infinite control." Lumley, a former English citizen himself, is capable of the same earthy eloquence as the films of Lyne. As he holds Peter's lighting invention in his hand he marvels at it and says "it produces an f-stop equivalent to a unit 5 times its size, draws only 18½ amps and it's so light you could carry the little bugger around all day in your mouth if need be. Now you have to believe a real mind thought this up, a cameraman who understands his craft completely." Peter's sensitivity to light is what Lumley insisted was the director of photography's true gift. "We'll set black cards to knock down bounce from a white ceiling," he says, "because Peter, like the rest of us, hates those dark eye sockets which top spill gives you. Then he'll have a look and make us turn the card this way or that in order to produce the odd footcandle." The gaffer looks around incredulously, then says, "The man gives camera f-stops in sixths and eighths, and can read color temperature with his naked eye to within a few degrees . . . plus, he can discuss wine, music, art or where to find the best Danish in New York with equal acumen . . . he's unreal."

Mitch Lillian, key grip, enjoys his relationship with the top cameraman, also. He says he has found extra time to experiment while working on the film because the director has a hatred of flags and nets all over the set. Relieved of some of the grip's normal responsibility, he was encouraged by Peter to play with a few of his own ideas. Lillian has consequently invented a new frame for his silks, solids, and Griffon. It is made from 1½" and 2" speedrail which slides into one another and can telescope from 10 feet to 20 feet depending upon the lighting requirements. It lets you adjust to odd sized material, as well as tailor your needs to a space. The same, simple principle is operative on a wall-stretcher he put together which can also telescope out the same distance. Plates and adjusting nuts on the ends give the long poles a bow upwards. When the lights are hung, the weight evens

out the pipe and exerts sufficient pressure on the plates to give additional support. "And," says Mitch with a broad smile, "all these marvelous, new scientific breakthroughs were made possible through Peter's encouragement and the fact that Adrian was probably scared by an open double net when he was a small child."

Except for exchanging a few dirty looks over boom shadows, the sound people and the camera crew don't usually have much in common. Bill Daly, sound mixer on *Nine and One-Half Weeks*, says boom shadows were not a problem on the film since most of their sound was transmitted through a Vega wireless system. But, because of tight spaces and "a desire to preserve our friendship", says the sound chief, "we devised a simple video arrangement to keep us from under Peter's tripod legs. At least one camera always has a video image going, so we cover a long shot of the set with a second, remote video camera and beam both images to my console." Two small monitors show him the proximity of the actors to each other and to the lens. Thus, gain adjustments are made without my being close to the action or in the way of the camera or lighting crew. "Our relationship has been most harmonious . . . sort of like a marriage which works because the husband and wife reside in different cities . . ."

By consensus of the crew the person most in the know on all matters concerning the production of the film was Steve Ross. He is the one you go to, I was told, when you either wish to know something or get something done. Steve produced commercials for Lyne for two years and is quite familiar with his likes and dislikes.

At the wrap party, after the arcs had been switched off for the last time, I asked Peter what he hated most about his tour in New York, and on the film. "Only that it's over," he sighed. △

Lear Levin heads up his own production company in New York.

ARRI UPDATE

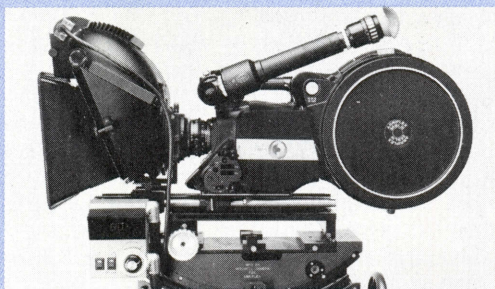
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Vol. 7, No. 1, August 1985

LIGHTFLEX

As announced earlier, ARRI purchased all assets and worldwide rights to the LIGHTFLEX system from Leigh In-

photometric range of the film several stops, without affecting the grain. When Lightflex is used on video cameras, it increases



Lightflex, with new reflector/mask combination, light source and electronic dimmer.

terests, PLC, in Birmingham, England. We acquired Lightflex because it's a technology that can provide additional creative controls to both cameramen and directors working in film and video production. In certain situations, it may also yield production cost efficiencies.

Lightflex the technology has already been in wide use for many years, and its effectiveness demonstrated as recently as with John Alonzo, ASC and his work on *RUNAWAY*, and with Woody Omens, ASC, whose three-part show *EVERGREEN* was broadcast on NBC this past February. Lightflex the product, on the other hand, required extensive re-engineering in order to make it easier to handle, more predictable in its performance, and more versatile in its range of applications.

The Lightflex Principle

Lightflex is an on-camera accessory, mounted in front of the lens, which overlays a controlled amount of light over the scene to be photographed, at the time of exposure. It allows the cameraman to modify the gamma curve of any film stock in the camera while filming, thus extending the

recording sensitivity without increasing noise. The result, for both film and video image recording, is more detail in the shadow areas, and a reduction in perceived grain or noise. Lightflex also permits in-camera color modifications, using special Lightflex filter packs, to selectively tone the image *without* affecting highlights or fleshtones, and for period or special effects.

Lightflex's New Design

The heart of every Lightflex unit is the patented, curved reflector which overlays a controlled amount of white or colored light on the image. The old system had two: one for 14mm to 28mm lenses, and the other for 35mm to 80mm lenses.



Lightflex's new "swing-away" housing.

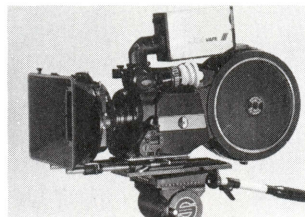
(cont. pg. 2)

VAFE

The application of standard 80 bit, SMPTE Time Code to film production and post-production is a hot topic in our industry right now, and for very good reasons. The "marriage" seems ideal—the superior imaging characteristics of 16mm and 35mm film, and the highly cost-efficient post-production technologies of tape. With this in mind, we've introduced ARRI TimeCode (ATC), optical SMPTE time code on film, and VAFE, our tape-oriented film camera system that utilizes ATC, a new color video tap, and an electronic frame store.

ARRI TimeCode (ATC)

ATC, co-developed with Coherent Communications, Inc., optically records standard 80 bit SMPTE time code on the sound-



VAFE System, with our new color video tap mounted on a 35BL-3.

track edge of the camera negative. Already available in our 16SR cameras, the time code is *burned* onto the negative permanently, and cannot be erased or lost. The system will use any film stock with the same results. Each frame of film is encoded with hour, minute, second and frame number, plus up to 8 hex digits of user information, such as camera number, roll number, scene and take numbers.

The system consists of three modules. The Camera Module controls the special LED in the camera aperture, which flashes the code and exposes the film dur-



ATC Modules for camera, and recorder, and Master Clock.

ing the pulldown cycle. It provides standard continuous time code for 16mm cameras in a thin bar code just outside the sound track area to assure Super 16 compatibility. For 35mm cameras, the Camera Module generates "burst" code which is condensed to about 80% of frame height and places it just inside the sprocket holes on the sound track side. The Tape Recorder Module will work with any multi-track recorder, and places the time code on the sync track or on either audio track. Sync head offset is automatically compensated for during recording.

The Master Clock can perform a variety of functions. Its main purpose is to load time code into all the modules used on a shoot. Other functions include verifying sync between cameras and tape recorders, and simplifying the record-keeping normally associated with feature or multi-camera production. It also has a digital readout that displays time code and user bits. In the event that a Master Clock is unavailable or damaged, either the camera or the tape recorder modules may be used to set time and user information. (cont. pg. 3)

Lightflex continued

The new Lightflex has one curved reflector for focal lengths of 14mm to 50mm, and a ground optical glass reflector to eliminate possible distortions when using lenses longer than 75mm.

- By far the single most important improvements were made in the light source and control of the Lightflex. To give a cameraman the greatest possible flexibility we re-engineered the unit to operate with three quartz bulbs rather than one. These bulbs are housed in a small, well ventilated compartment which is attached to and integrated into the diffusion sphere of the Lightflex. With the new electronic Dimmer Control, this arrangement gives a much wider range of operation without significant color temperature variation.

We also found more efficient positions for the light sources in the sphere. By eliminating the losses due to the shielding required in the original single bulb design, the power efficiency of the system has been increased substantially.

- The main Lightflex unit, for standard lenses, is mounted on the camera bridgeplate via a "swing away" support. This makes all lens changes and cleaning functions much easier.
- The various shades and flags, and the multitude of masks and single pieces making up the system have been reduced to only two discrete units: one for wide to normal focal lengths and another for long lenses. For the assistant, this will make handling substantially easier.
- Connecting the lens and the Lightflex is a standard Arriflex 3" x 3" filter stage and bellows. Now, only one adapter system for most fixed focal length lenses.
- The Filter Tray, located between the Light Sphere and the Reflector, has been simplified and greatly improved. In particular, several layers of diffusion gel have been replaced with spe-



New Lightflex Dimmer Control.

- cially made, high diffusion glass. This helps obtain absolutely even illumination across the frame, while at the same time providing more resistance against scratching and deterioration.
- The new Lightflex Dimmer Control replaces the old and very heavy Variac control. The new control weighs only 14 oz., and is an electronic dimmer designed to be used either handheld or attached to the side of the Lightflex base bracket. It incorporates two switches to control the multiple lamps in the Lightflex housing (switches have LEDs to indicate when the system is on), a digital readout that measures the voltage at the lamps to guarantee repeatable light levels, and a precision dimmer dial. The Dimmer Control will operate on either 115 or 230 VAC. With the appropriate cables, it can be used remotely for dolly and Louma crane shots.

Re-designed for Assistants

Our objective in re-designing Lightflex was to make it easier to use. Especially for the assistant, the goal was to reduce the number of individual pieces and operations required to efficiently use the system. We did so by re-designing the Lightflex to become an integral part of any camera system it is used on. The new Lightflex is easier to use, right down to the reduced number of cases required to hold it. Detailed instructions, as well as Lightflex Set-Up Charts, are provided with every system. These Charts, together with the standardized filter packs will provide a starting point for cinematographers prior to modifying Lightflex to suit their own creative ideas. Once the new systems are consigned to Lightflex Rental houses, seminars will be held throughout the industry.

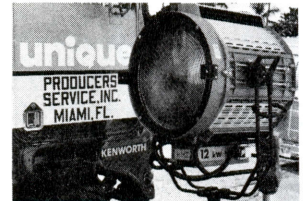
MIAMI VICE

First To Get New ARRI 12kw HMI

J.B. Jones, owner of Unique Producer's Service in Miami which provides the entire lighting package for MIAMI VICE, just took delivery of two new ARRI 12kw HMI lights for use on MIAMI VICE. The show, which has gained enormous media attention for its "look," has used ARRI HMIs from the beginning.

Jones, the show's special effects expert noted, "we went with the ARRI 12kw lights for two reasons. First, its wide, flat beam, lots of light, and no hot spots like with some other 12kw's. Second, the ARRIs are tougher, particularly inside the lamp-head, and more able to take the kind of treatment they get while on location. We use all the other ARRI HMIs on MIAMI VICE, and based our decision to buy the 12kw's on that experience."

The ARRI 12kw HMI is the most compact 12,000 watt lamphead available, but still features a 20" diameter Fresnel lens to provide a wide spread beam. The ARRI 12kw uses either ILC or Osram lamps without modification, and produces over 800 footcandles at 100 feet. Proven features include ribbed aluminum construction, modular starting circuitry, safety cut-off switch, center-of-gravity adjustment, and specially designed ballasts assure reliable location performance. Both the head and ballast conform to strict safety standards.

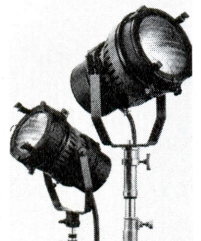


MIAMI VICE's new ARRI 12kw HMI.

New ARRISUN HMI PAR Lights

Introduced this year at the NAB Show, the ARRISUN 5 and 12 are designed for the new, popular 575W and 1200W sealed beam, daylight PAR lamps from Sylvania and Thorn. ARRISUNS are high efficiency fixtures with extremely high output, making them ideal for interior bounce, and exterior punch lighting.

The ARRISUN's tough thermoplastic housing is ideal for all location situations. "Cool touch" handles, easy lamp access, and safety cut off switch provide convenient operation. ARRISUNS operate from standard 575W and 1200W ARRI ballasts.



ARRISUN 5 & 12 lights.

New Shoulder Magazine for 35-3

The new 400 ft. coaxial shoulder magazine for the 35-3 is now available. Providing the lowest camera/magazine profile possible for the 35-3, the magazine counterbalances the 35-3 for handheld shooting, and is contoured to fit your shoulder. Without film, it weighs only 8½ lbs.



New 400 ft. Shoulder Mag and Offset Viewfinder Door for 35-3.

The new shoulder magazine is constructed from an injection-molded, high impact resistant plastic that, during manufacture, is "foamed" around a strong, lightweight metal frame. It incorporates a mechanical footage counter and is supplied with a loop protector. It measures 18 in. long, 6 in. wide, and 8¾ in. high.

"Offset" Finder Door for 35-3

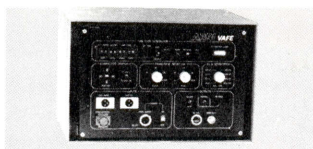
To complement the handheld configuration of the 35-3, the "offset" finder door was designed specifically for use with the new shoulder magazine. It positions the eyepiece about two inches out, and 4 inches forward from the standard finder eye level, greatly enhancing handheld operation of the camera.

VAFE continued

Color Video Tap

The major element in the VAFE System is our modified, 1/2" Saticon single tube color video tap. Designed specifically to work with 35BL-3 and 35-3 cameras, the new color video tap replaces the standard ARRI black and white video camera. At 270 lines resolution, it provides sharp video images over a wide range of lighting and contrast situations. The sensitivity of the camera was increased by boosting the target voltage of the tube.

Because color video cameras don't have the dynamic range of high quality black and white cameras, and knowing the low lighting levels common in film production today, we've also added a new, very sensitive, high resolution black and white camera to replace the VAFE color camera in those extreme situations.



VAFE Control Box.

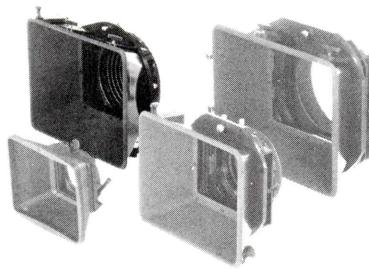
Flicker-free Video

The heart of the System, a digital frame store, was designed to remove the flicker caused by the rotation of the mirror reflex shutter. Advanced micro processor technology is used to "interlace" a computer image in the blank periods, effectively regenerating a continuous video image of reasonably high quality.

The Control Unit has inputs for time code; userbit entry for take and scene information; character display; the frame rate selector and film sensitivity control, for speeds of 24, 25, 29, 30 and 30 drop frame, and ASA settings from 16 to 1600 as well as various other inputs and outputs.

The Newest ARRI Matte Box—the 5" x 6"

Until now, there have been two matte box choices for Arriflex 35mm cameras. The 6.6" x 6.6" Studio Matte Box, with three rotating and sliding filter frames, accommodates any prime or zoom lens, in any aspect ratio, without vignetting. The other, the 4" x 4" Swing-Away Matte Box, is much smaller and lighter, but covers only prime lenses. Missing, thus far, is a Matte Box that would cover "90%" of all situations, which we now hope to provide with the new, versatile 5" x 6" Production Matte Box.



New 5" x 6" Production Matte Box.

Suitable for all ARRI 35mm camera systems, the 5" x 6" will handle all prime and zoom lenses currently used, without vignetting. It has three fully rotatable filter frames—two built into the matte box, with the third, a round stage, mounted via a "snap on" collar in the back casting. A selection of aluminum filter frames adapt any 4" x 4" or Panavision-size filters to the 5" x 6" stages.

The 5" x 6" matte box is mounted on a swing-away bracket, and is supplied with six inch and 138mm round filter reflex prevention rings, a top mounted flag, and standard focal length masks.

Also NEW at ARRI...



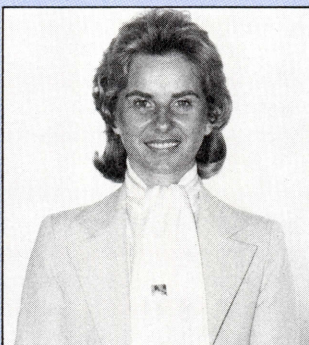
MARGARET M. REGAN

Our expanded New York sales department is now headed by Margaret, who joined us recently after completing her M.B.A. at Iona College. After positions at IBM and as an account executive at a large New York importing firm, Margaret is now involved in importing, spare parts, purchasing and sales. She can be reached at (914) 353-1400 regarding catalog and spare parts sales.



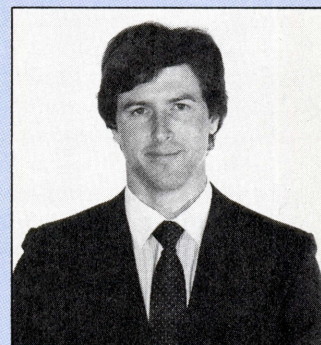
LISA C. BLOOM

Lisa is our new Lighting Sales Administrator in New York, and assists ARRI Lighting Product Manager, Charles Davidson, in all aspects of our HMI and ARRILITE business. She is an M.B.A. candidate at Iona College, and has held positions in marketing home computers, and in administration at the promotions firm of Robert Landau Associates, working on such accounts as Burger King, Miller Beer and Nabisco.



TERRIE SUDOL

Our newest staff addition in the Burbank office, Terrie came to Arriflex from the American Film Institute, where for the past two years she was assistant to AFI Director Jean Firstenberg. Previous to that, she was assistant to Roman Harte, director of the AFI's Production Services. Terrie is now our Lighting Sales Rep on the West Coast, and handles sales of HMI lights, ARRILITES, and grip equipment, as well as related customer services. Terrie may be reached at (818) 841-7070.



BILL RUSSELL

Bill joined ARRI as Western Sales Manager in 1983, and due to the hiatus in publishing our UPDATES this is the first opportunity we've had to announce that he's now with us. He came to Arriflex from CFI Labs, where he was an account executive in the film sales dept., and previous to that he was assistant to director Ted Kotcheff, working on such films as FIRST BLOOD. He began his career in our industry with Arriflex, back in 1972. Bill handles all camera sales and related customer services, and also oversees general operations as they concern sales and administration at the Burbank office.



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The Whirlwind World of William Greaves



by Rohama Lee

William (Bill) Greaves, of New York City and the world, has worked during the course of his 32 years as a filmmaker, on close to 300 documentaries (200 of which he produced). He has also writer/producer/director credits for feature films *The Marijuana Affair*, for *Symbiopsychotaxplasm: Take One*, an avant-garde production awaiting release, and for *Ali, the Fighter* starring Muhammed Ali and Joe Frazier in "the fight of the century" at Madison Square Gardens. His most recent feature credit is that of executive producer for Universal Pictures' box office hit *Bustin' Loose* with Richard Pryor and Cecily Tyson. But it is as one of the most outstanding of the early documentary filmmakers, and one of the few remaining independents still in business after 21 years, that Bill Greaves is unique.

There is an increasing involvement with the dramatic film on Greaves' calendar nowadays. Originally he elected to excel in the documentary because of the opportunities it presents for the expression of human concern and social conscience, which he possesses in large measure. His expertise is in dramatizing reality

without distorting it. The character of his work has made him a repeater with a wide variety of sponsors in both industry and for government agencies. Among these is The National Park Service for which he has just completed *Frederick Douglass: An American Life*, his second production for the NPS within the past three years.

A prime mandate of the National Park Service is to identify and restore the home and workplace of significant personages in American history. *Frederick Douglass: An American Life* was designed to acquaint visitors to Cedar Hill, the Douglass home in Anacostia (Washington, D.C.) with the life of "an historic black American". (The Douglass home originally in Rochester, N.Y., was destroyed by arsonists when Douglass was away on a lecture tour.)

Still a significant factor in vital concerns of today, this most dynamic black American of the 19th century was born a slave on a Maryland plantation in February of 1818. At the age of 20 he escaped to the Free State of Massachusetts, and was discovered there by the famous abolitionist William Lloyd Garrison who

pressed him into the service of the abolitionist cause. Intellectually gifted, Douglass became one of the major orators of his century. An especially appealing scene in Greaves' film is of Douglass as a child being taught by his master's wife to read. The lesson is interrupted by the boy's owner who forbids his wife sternly not to teach Frederick or *any* slave to read. Growing up, Frederick literally "stole" his education from the young whites around the plantation, by listening and remembering.

The film reveals Douglass, self-taught, as he developed and subsequently became an editor and publisher of his own anti-slavery newspaper. He was also an active champion of the broad social and civil libertarian issues of the time. They included, even transcended, slavery. His last public appearance, on the day of his death (February 20, 1895) was as the speaker at an important women's right-to-suffrage meeting.

It is on that day the film story begins – and ends.

More than just supplying the facts of a long and eventful life, the film about Douglass had to embrace scholarship and yet have dramatic reality. As Greaves puts it: "This film had to be a theatrical event, a kind of psychological hook to bring visitors to Douglass' Cedar Hill home in Washington into the life of the man, causing them to form a close relationship with him." The problem was, how to do so without violating the rigid specifications of historical research provided by the National Park Service.

"In the making of a feature film", Greaves explained, "almost anything can be done to dramatize the subject matter under treatment, even if the subject is a character in history. But the docudrama requires the exercise of restraints and constraints not

experienced in conventional feature film making. The whole area of creativity is taxed, often even encumbered, by scholarship. What was called for here was dramatic reality. The problem was to get it without violating National Park Service guidelines."

In the initial approach to the script, Greaves and his co-author Lou Potter decided (as is not unusual in dealing with personages and events of the past) to use graphics and memorabilia along with live action. It became progressively apparent, however, that the force of the live performances weakened the impact of the still pictures, and vice-versa. Even though many of these had rarely if ever been seen before and were of great interest, they were finally omitted in favor of uninterrupted live action, dramatically presented. Furthermore, a start was made with narration and autobiographical material, but this too was ripped out along with the graphics, in favor of dialogue – 90 percent on the part of all the characters featured.

In wrestling with the problem of a proper format for the script, Greaves and Potter – working closely with Tim Radford, executive producer for the National Park Service – decided on the flashback technique as most suitable. Using a stream-of-consciousness style, it highlights and accentuates the incidents and events that distinguished Douglass' vital role in American history.

The park service had specified a 30-minute length, but Greaves in his own research uncovered such a wealth of interesting material, his first cut of the film came to almost an hour. He was then faced with the challenge of having to cut the footage down in the editing process, without losing credibility or dramatic continuity. Greaves personally edits, or closely supervises the editing, of all his films. On this one he worked with Alonzo Speight, a talented filmmaker from Boston, recently settled in New York.

As an assist in editing any and all of his productions, it is Greaves' custom to call in, at various checkpoints in the production process, a small audience of hard-nosed, sophisticated film people "to let them tear my film apart. I prefer to get my lumps", says Greaves, "before the film is released, not after. It's sort of like using a computer to give me feedback and correction." This practice is the result of his background in documentary, and also of his early, intensive training at the Actors Studio in New York. He explains: "The nit-picking process and constant analysis – of the film in the one instance and the actor in the other – purifies the work and assures authenticity."

A unique difficulty in the making of the Douglass film was that so much of it had to be shot within the Douglass home and in locations intimately connected with the Douglass story – no studio or "made" locations. The home had been beautifully and meticulously restored. Greaves tells how zealously it was guarded against any possibility of harm.

"Official Restorationists actually dogged our steps. They alone are permitted to touch or move any objects in Cedar Hill – they wore white gloves to avoid increasing the incidence of moisture on the furniture, or aging from any other source. The furnishings were also dependent for continued existence on scien-

tifically determined temperature and humidity controls. Our lights had to be immediately turned off after each take – and each take had to be kept to a minimum.

"The Restorationists also tried always to maintain a climate not corrosive to fabrics or organic materials. Even the window panes had to be specially treated, to screen out destructive sunlight. The purpose of these precautions was to maintain the 19th century into the 20th and as far beyond as possible. It's unquestionably a laudatory purpose, but it presented all kinds of problems for filmmaking.

"A production crew coming into an environment of such obstacles and restrictions is under a great deal of pressure which prevents handling the set in the usual professional way." Further, according to Greaves, "it's a no-nonsense situation. The historic home and its contents are more important to the Restorationists, in the long run, than the film. The key to the making of film was 'don't tamper with the facts, or with the accoutrements'. It was like filmmaking inside a soap bubble."

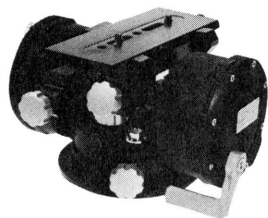
Thanks to long experience in production, Greaves was able to get together an experienced crew for this special situation. It consisted of 35, in all: two co-producers (Dwight Williams and Louise Archambault Greaves); a production and location man-

Greaves and cast on location at Richmondtown Restoration. Opposite page, left to right: Hugh Morgan portrays Frederick Douglass, Greaves, and Charles Reid as Abraham Lincoln.



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ager; an art director (who enhanced the set of historic Richmond Town on Staten Island); three casting directors; a cast of 65 including extras; two makeup artists, and a costumer.

As director of photography Greaves chose Juliana Wang because of her experience with documentary and, more particularly, because of her unique creative artistry that assured him of a compelling theatrical realism. (Juliana Wang, freelance cinematographer, has shot a number of documentaries for CBS-TV News. Her *Bitter Sweet Survival* and *To Be Ourselves*, have been shown on PBS.)

The shooting was done with a double-fog filter which diffused and "antiqued" the image. As he sometimes does, Greaves operated the camera for occasional scenes (notably one where a tall operator was called for - Greaves is a hefty six-footer). But he credits Juliana with capturing the rich tones of the 19th century sets, and photographing dark skins to best advantage. The quality of her camera work was further enhanced by her skillful positioning of white and dark-skinned actors in relation to available light - as in the outdoor meeting of Douglass and John Brown.

A film like this one, according to Greaves, should cost over \$400,000. For *Frederick Douglass: An American Life*, the budget was much less, "though it was one of the largest the National Park Service has ever given. On the other hand", Bill adds, "it was one of the smallest you could work with to get a full-costume drama on film."

Because it could not include high-demand, large-sum professional actors, Greaves had to rely for the most part, and even for the star part, on talented unknowns or little-knowns. Having started as an actor himself on both stage and screen, and having studied with such theatrical personages as Lee Strasberg and Elia Kazan, he was able to secure high level performances from his cast.

"Hugh Morgan wandered into my office one day, looking for work as a voice-over narrator - he's an established radio announcer with WQXR, the *New York Times*' station. But he had no acting experience of any consequence. I picked him on a hunch - he looked like Frederick Douglass, had the bearing, the attitude, the eyes. And he screen-tested well. I gave him just two weeks of intensive acting technique training. He took it amazingly well and came through." Greaves worked similarly with Lee Moore, another radio announcer who convincingly plays the part of John Brown.

William Greaves' own story is a saga.

One of seven children of a cab driver and sometimes-minister, Bill's early youth was spent on 135th Street in Harlem. At the age of four he began drawing pictures and was good at it - he says he's going to pick up that talent one day when he has time (if ever, in his whirlwind career). At 14 he won a scholarship to the prestigious Little Red Schoolhouse in Greenwich Village. When, in due course, he entered City College in New York, he elected engineering, but dropped out to enter the world of theater as a dancer with the renowned Pearl Primus Dance Troupe. He then "got hung up on acting" at the American Negro Theater; won a John Golden Audition; and arrived on Broadway in 1946 in *Finian's Rainbow* with Ella Logan and David Wayne.

After two years of *Finian*, he played opposite Ruby Dee in a special "all-Negro" performance of *John Loves Mary*. In 1949 he was featured on Broadway simultaneously in a play (*Lost in the Stars*, Maxwell Anderson/Kurt Weill), and two movies: Louis de Rochemont's *Lost Boundaries* starring Mel Ferrer; and *Miracle in Harlem*, a Jack Goldberg/Herald Pictures production. It is interesting that *Miracle in Harlem*, recently discovered in an abandoned warehouse in Tyler, Texas, was shown in the Southern Methodist University Film/Video Archives

Special Exhibition which invited Greaves to Tyler to introduce the film and the era of its making. It is also interesting that, during his acting period, Bill Greaves wrote over 100 songs, one of which – *African Lullaby*, in Swahili, was recorded by Eartha Kitt and is an archival item.

It was anger that motivated Greaves to want to make films rather than act in them. Always interested in social problems and deeply into black history, he became infuriated by “the socially degrading stereotypes of black people that white film producers threw up onto the American screen.” He applied for a scholarship in cinema being offered by the John Hay Whitney Foundation. Despite his vast experience and obvious talents – and though he presented letters from Academy Award winner Louis de Rochemont, from filmmaker Elia Kazan and director Rouben Mamoulian – he was turned down. Greaves’ explanation is without rancor or resentment:

“The cinema was different at the time – the times themselves were different – there was less willingness to accept the idea of a Black person in the communications media.”

His reaction to the turn-down was to apply to The National Film Board of Canada, pre-eminent in the Documentary, and with a track record of accepting apprentices from all over the world. After three months as an apprentice, Bill was made a member of NFBC’s regular staff and, in the 1950’s, spent eight years with the Board as unit chief editor, writer and director.

In both Toronto and Montreal, the Canadian Drama Studio put on theater productions under Greaves’ direction, and also did some television production. Bill recalls this period as one of the most creative and enjoyable in his professional life. Eventually he left the film board to devote full time to these theater activities – until the recession. He then accepted the invitation of the International



Civil Aviation Organization (a specialized agency, in Canada, of the United Nations), and became its public information officer in charge of film and television. When an opportunity presented itself to be on the film and television staff of the United Nations in New York, he closed down his activities in Canada and returned to the U.S. to take on the U.N. assignment offered him.

The U.N. had decided to do an hour-long television special with Alistair Cooke, on the flight of an airliner around the world, and the international cooperation necessary for its safety. Bill Greaves was the most qualified prospect, as a filmmaker with a knowledge of aviation matters. The assignment took him twice around the world on a Qantas (Australian) airliner, doing research on the first trip, and filming with Alistair Cooke on the second go-round.

“We touched down on the airports of 11 countries,” Greaves recalls. “It was an incredible experience. I for one was extremely impressed with the high quality of responsibility and intelligence of the people running the world’s aviation system.” The resultant film, *Cleared For Takeoff*, is being preserved in the U.N. library.

It was somewhere in the early Sixties that pioneer woman filmmaker Shirley Clarke saw and was enthusiastic about *Emergency Ward*, an early *cinéma vérité* production by Greaves for The National Film Board of Canada, shot

in a Montreal hospital. Shirley brought Bill’s film to the attention of George Stevens, Jr., then head of the Film and TV Section of the U.S. Information Agency. Stevens offered Greaves the opportunity to do a film on individual freedom of expression in America. At that point (in 1964) Greaves left the U.N. and set up his own company, which he had long wanted to do.

Within the next eight to ten years, William Greaves Productions made four films for the USIA. One of these in particular was, for Bill, “the most incredible experience of my whole life, so far!”

This assignment called originally for just a news short on the First World Festival of Negro Arts, held in 1966 in Dakar, Senegal. For the assignment the USIA supplied what was a requisite amount of footage – all black/white, no color. When Bill got to Dakar he found there an amazing representation of black creative genius – more than 200 writers, artists and performers from around the world, including such outstanding Afro-Americans as Langston Hughes, Duke Ellington, Alvin Ally and his dancers. Greaves also found that France and Russia, among other countries represented, had sent full crews and color film for extensive coverage.

Realizing that the USIA had improperly evaluated the significance of the event, Greaves barraged Washington with demands for more raw stock. His

Documentary cast and crew on location at Knole Estate.

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urging resulted in fuller cooperation - except that no provision for color film - or a crew - was made. He had only himself, a French cameraman hired at the festival, and his Senegalese chauffeur whom he crash-trained to be a sound recordist. The film was shot in the allotted black-and-white; but Greaves tinted it sepia, enhancing its production. For many years it was the most popular USIA film in Africa and eventually, the Senegalese government selected it as the official film of the festival.

In addition to making USIA films, other government agencies and a variety of sponsors enlisted the aid of William Greaves Productions. Among these was National Educational Television for which Greaves co-produced and directed *Still A Brother*. NET's management was so pleased with this 90-minute public affairs special that it invited him to become part of its new and unique network series, *Black Journal*.

During the two years he was both co-host and executive producer, *Black Journal* was nominated twice for an Emmy, and won one in 1970. At the end of two years - and 80 film segments produced by Greaves and his crew - he had to replace himself and return to his own business. He did so with the satisfying realization that *Black Journal* was even then the prototype for local black programs that sprang up throughout the country and opened the way for large numbers of black filmmakers to develop skills entitling them to become established workers in, and full-fledged members of, the media and communications industry.

In the beginning of its existence as an independent production company, the government was the chief source of contracts for the William Greaves Productions company. In the process of making films - first for government agencies and subsequently for other sponsors, William Greaves Productions has consistently turned out an average of four, sometimes five pictures each

year for the past 15 years. Among its many winners have been *In The Company of Men* made for Newsweek magazine (8 awards), and *Voice of La Raza* with Anthony Quinn, for the Equal Opportunity Employment Commission (3 nominations, 4 film festival awards).

For Exxon, in 1974, Greaves' company made *From These Roots*, narrated by Brock Peters. This film added 22 national and international awards to the still growing collection in the William Greaves Production office. *Space For Women* (1982) with Ricardo Montalban narrating, encouraged women to pursue careers in space and space science. So far, it has won eight awards for NASA and its producer.

Booker T. Washington: *The Life and Legacy*, commissioned in 1982 by The National Park Service (Gill Noble, narrator) has taken 10 film festival awards to date - and it was on the strength of its successful handling of a controversial turn-of-the-century period that The National Park Service returned to Greaves for the making of *Frederick Douglass: An American Life* - recently and enthusiastically reviewed at a gala gathering of Washington notables.

With respect to his efforts on behalf of blacks and other minorities, he recognizes the changing times and looks forward to the day when "the whole protest dimension will not be necessary. At this stage of the game", he says, "I've come to terms with the fact that no one filmmaker can change the social or political climate by himself or herself. But you *can* cultivate and foster certain lines of thinking. If you at least do that, you will be making a satisfactory contribution to human progress through the media, and particularly through the tremendous power of the screen - theatrical, nontheatrical, cable, television, whatever..." △

Rohama Lee is a free lance writer based in New York.

Birds Over Hollywood

by Bob Morgan

Scarcely an hour passes in prime time television without seeing a helicopter in an action show. Even more often, the helicopter is used as a camera platform.

As far as television drama is concerned, helicopters first came on the scene with the *Whirlybirds* series in the early '50s. But it was not until a decade later that the chopper really started to come of age in film production, in both features and television.

This most popular symbol of adventure films was still in its infancy at the time of *Whirlybirds* – the first helicopter having been certified for commercial usage just a few years before in 1947. Aerial cinematography goes much further back than *Whirlybirds*, however, having come into its own in the 1920s.

At first, cameras were hand-held in open cockpit aircraft and hand-cranked. By the time of *Wings* (1927), someone (possibly cinematographer Harry Perry, ASC) had the idea of mounting the camera on the machine gun ring of a surplus World War I fighter plane. Such motion picture flight pioneers as pilots Paul Mantz, Frank Clarke, Frank Tallman, Dick Grace, Al Wilson, Leo Tomick and Col. Roscoe Turner lent their expertise to the making of more sophisticated aerial scenes. Some top cameramen became celebrated for their superb aerial cinematography, among them Perry, Thomas Tutwiler, ASC, Elmer G. Dyer, ASC, Charles Marshall, and Glen Kershner, ASC.

The early talkie era brought forth such fine flying yarns as *Hell's Angels* (still the most elaborate of all such films), *Hell Divers*, *Ace of Aces*, *The Eagle and the Hawk*, *The Dawn Patrol* and *The Lost Squadron*. Eventually, however, there was a period of stagnation of aerial photography. Because of wartime restrictions, most of



the aircraft films made during World War II were done with studio mockups and model shots.

As stunts became more important, another problem was the lack of maneuverability in winged aircraft, as well as the fact that extremely low speed flight and hovering were impossible. Shots from the air of action taking place on the ground just didn't seem to work.

By the '50s, the advent of television and the shrinkage of audiences attending theaters on a regular basis forced major producers to recognize the technical innovators who were coming up with exciting new systems which would revolutionize the contemporary art of filmmaking. The producers hoped these innovations would return mass audiences to the theaters. Cinemascope, Cinerama, stereo and high fidelity sound became commonplace in high-budget pictures, many of which quite naturally fell into the category of spectacles.

The advances in electronics (many as a result of government research that had been conducted as part of the war effort) in particular made the magnetic recording of sound possible. Magnetic recording reduced the size and weight of sound recording equipment and made recording sound in flight possible.

Into this atmosphere of change and technological progress came the first airborne camera platform that was truly steady and suitable for aerial photography. That platform was the helicopter, the most maneuverable of all aircraft.

Among the leaders of the helicopter age in film was a former Marine Corps pilot, David Jones. Jones came to California following his discharge from the service and brought his own helicopter with him.

"I came tripping into town in 1960," he says. "By pure luck that coincided with the transition period when cameras were first beginning to

Television's famous
"Airwolf."



Stan McClane,
cameraman and
pilot, Dave Jones.
Below: Jones and
McClane confer
before filming.



really get into motion. The industry was moving away from those gigantic Mitchells that had to have huge wheels so they could be moved around the soundstage; cameras were getting smaller and smaller.

"Then some very smart producers went to New York and found the John Frankenheimers and the Sidney Lumets and all those great live television directors of the late '50s and early '60s period. Those guys used to take giant RCA video cameras and move them all around the TV stages. They were brought out here to Hollywood and did the same thing with film cameras.

"That was when I came into town with a helicopter and said, 'Hey, boys, I've got something you can move your cameras around with,' without really knowing what I was tapping into. I

was in the perfect place at the perfect time."

Jones' passion for filmmaking is so obvious in his voice and manner that you know you are listening to an evangelist. "I really love what I do for a living," he explains, while also noting that he sees "a big vacuum out there for cinematographers and pilots who want to learn this business, who really want to move up and do something with it. I mean, anyone who says Hollywood's a closed town better look around. This place is so wide open it's unbelievable. The technology of aerial photography and filmmaking is racing forward. The helicopters are better, the cameras are sophisticated and they're getting even smaller . . . These new developments are available to filmmakers.

"What I *don't* see are pilots who want to learn all there is to know about the film business – from craft service right through wardrobe and on to being a director and camera operator. All of these are essentials that go into the making of a film. I don't see many camera operators and assistants who are willing to put in the apprentice time necessary to be an aerial camera operator."

Jones is currently involved in and responsible for all the aerial sequences for the TV series *Airwolf*, and uses Jetcopters in Van Nuys as his prime supplier of helicopters and equipment for the series. Jetcopters is owned and run by Peter McKernan, Sr. and his son, Peter, Jr. The company owns 22 of these expensive craft, everything from the smallest Hughes 300 with room for one passenger and a pilot, to the Sikorsky S-76, a twin-engine executive ship replete with VCR, wet bar and color TV, valued at over \$3.5 million.

Says Jones: "Jetcopters is just about the only place I know where they mop the floor of the maintenance area. That shows me something," he states. "The greatest enemy of anything mechanical is dirt. It gets into everything and can eventually ruin any piece of machinery. You pick it up on your shoes, it works into the floor of the choppers, into engine compartments and then into the engines themselves. Then you have major problems, and just at the time you least want them – in the air. At Jetcopters, maintenance is continuous, not just when problems occur."

"The enthusiasm you see in the young pilots at Jetcopters is easy to understand when you talk to McKernan himself. If McKernan was any more enthusiastic he wouldn't need a helicopter to hover. He's an expert pilot and does nearly all of the flying of the *Airwolf* machine himself." In addition to being a pilot, Jones is a director as well as a second unit/action director.

Cinematographer Stan Lazan has worked with Jones on 22 episodes of *Airwolf*, but this is not their first association. "I've known David since I came to California in 1966," he recalls. "I've flown with him many, many times, first doing commercials and later features and episodic television. I depend upon his expertise. I can say,

'David, I need this look or feel,' and he knows exactly what I mean and he gets it. Or we can reverse roles and as a director he says, 'Stan, this is what I need and I think you can make it work.' I think that's a pretty special marriage.

"*Airwolf* wouldn't have the same visual excitement in the aerial work and on some of the ground work if it weren't for David. He must take the script and interpret what the writer has written and know what the producer needs, then interpolate that once again into the requirements of the scene: the photography, if there is one ship, two ships or whatever, the speed at which the ships are traveling, how the scene works in terms of excitement, if there is danger, impending danger, no danger . . . if it's the conclusion of the scene, etc.

"David is a unique talent. He is not only a pilot, but he is a director and, as far as I am concerned, he is also a cameraman. He is sensitive to what it takes to make a shot work. *Airwolf* is a helicopter show. Jan Michael Vincent and Ernest Borgnine are fine performers and fine people. Both are very popular, but the people are in love with that helicopter!"

To illustrate his point, Lazan refers to one *Airwolf* episode in particular. "I think it's the most spectacular thing we have done on the show," he says. "It was probably the most difficult, as well. It was a sequence where Archangel (Alex Cord) was being held captive in an East German castle. David had to lift the chopper over a wall and sit it down in the middle of a courtyard. We filmed it on Castle Square on the backlot at Universal. We had people in the immediate vicinity of the helicopter, we had explosions, lighting equipment, cross camera coverage plus a hand-held camera almost directly under the chopper as it came down. David had to put that chopper down exactly right. It couldn't be four or five feet off the pre-set mark; it was spectacular, almost impossible shot. David had to do it twice in the script, and one of the times was at night! I don't know anybody else, frankly, that I would have trusted to set a chopper down in such a confined space.

"Unfortunately, in television we rarely get the preparation time we'd like. That was a feature film sequence in a television episode. As a cinematographer working in a situation like



the Castle scene, I rely heavily on David's expertise. On a shot like that, nothing moves until David says it moves. He is the one most qualified to determine whether a shot is safe or not."

Safety is, of course, a preoccupation with Jones. "The pilot is the one responsible for the safety of an aircraft and everybody around the aircraft. Not the director, not the producer, not the cameraman. It is in the lap of the pilot," he says.

Lazan has complete confidence in Jones' capability. They have been working together for nearly 20 years and have developed a rapport that is absolutely essential. According to Lazan, "I started flying with David while I was doing commercials. In those days I was functioning as D.P. as well as being my own operator and I would fly with him all the time . . . usually hanging out the side of the chopper."

There is a great deal more to operating a helicopter on a motion picture set than just safety or getting the shot. These points can be of extreme importance to Jones. "I don't know anybody else that can upset or even ruin a set as quickly as the helicopter pilot. He has to be smart enough and considerate enough to be aware that a cloud of dust can not only upset everybody on a set but damage the equipment—especially camera and sound equipment—and cause long and very expensive delays in shooting. A pilot that does that isn't going to be on the set very long or very often. He's also going to make his own job a great deal tougher.

"It's amazing how a coating of dust on the catering tables just before lunch can cause a lot of bad backs on the part of the crew when the pilot

needs a little help lifting some heavy equipment. And it doesn't thrill anybody if the propwash blows off the star's wig or makes a female star's skirt blow up over her head.

"The helicopter pilot also has to be smart enough and diplomatic enough to be aware of which way the sun is shining," Jones continues. "That may sound a little basic, but a director and a cameraman, with all the pressures of time and budget on their minds, could be so preoccupied with getting a shot of the actors walking along the beach with the cliffs in the background that they sometimes forget there's going to be a big helicopter shadow covering the actors. The pilot has to be able to recommend an angle that gets the same basic shot but eliminates the shadow.

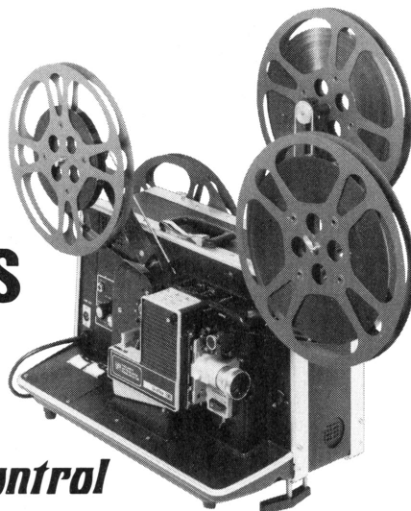
"Most important of all, the helicopter pilot has got to be able to say, 'No, that isn't safe for the cast or crew, and it can't be done that way.' You also have to be able to keep your sense of humor. I mean, if the director wants me to fly a helicopter upside down through a tunnel filled with water, I'll tell him where he can get a submarine! There are some things that aren't possible with a helicopter."

The spectacular things that can be done on screen with helicopters are well known to anyone who has watched television or feature films in the past few years. But the things that you don't necessarily see are perhaps even more important to the cinematographer.

Lazan explains: "Helicopters in themselves are unique. I look at them as flying camera platforms. If you think of them as a tripod, everything must center on the nodal point. And the nodal point of the aircraft (or point of rota-

On location for *Airwolf* as crew sets up shot.

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tion), if you think of it in terms of physics, is the pilot himself. He must change his thinking to adjust that nodal point back to the fuselage (where the camera is), and he must be able to control the attitude of the aircraft accordingly. He can't turn the plane from the pilot's seat, but has to compensate so the axis of the turn is the nodal point of the camera. If the pilot doesn't understand that, you have to worry about the focal point of the shot sliding from one side to the other.

"There must be constant communication between the pilot and the operator. You have it all worked out in advance, but there still needs to be constant communication. Looking through the viewfinder of a camera is like sitting in a long, narrow theater looking at the screen. You suffer from tunnel vision. All you can see and all you are aware of is the image in the viewfinder. Your vision and your senses are all tuned to one direction, a single plane. You lose sense of altitude, of speed, of the relationship of objects.

"That's why you need someone with the expertise of a David Jones. He interprets everything like a cameraman. And he reacts a little bit quicker than you when all your concentration is centered through that lens. I'm lucky in that I learned to shoot with both eyes open and use my peripheral vision. I guess that comes from shooting documentaries where you can't re-stage things if you miss a shot. If you miss a shot, you have missed it and that's it."

Motion pictures and television have long been known as the only art forms where collaborations are the mainstay of the industry. The latest collaborative team in filmmaking is that of the cameraman and helicopter pilot. It is a partnership that is in its infancy, but as camera equipment continues to improve and becomes smaller and more manageable, and the technology of helicopters continues to race forward, there appears to be an unlimited future for pilots and cameramen. They will never gain the fame of an Astaire & Rogers, but for those involved in the production of motion pictures, the cinematographer-helicopter pilot duo will continue to provide new and fascinating, as well as thrilling, progress in filmmaking. △

Bob Morgan is a freelance writer in Los Angeles.

American Cancer Society's 'Smoking Fetus'

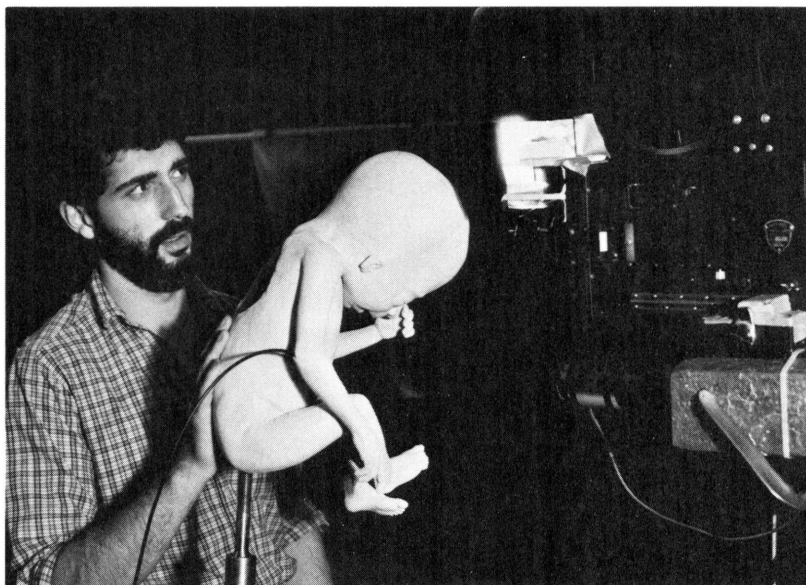
by Bruce Mink

The sound of a heartbeat is heard. A human fetus fades up on the television screen in close-up and a voice-over begins: "Would you give a cigarette to your unborn child?" The camera pans and dollies back to reveal an entire fetus existing serenely in the womb of its mother. "You do every time you smoke when you're pregnant." At this point the fetus slowly brings a lit cigarette to its lips and takes a puff, exhaling the smoke into the glowing placenta it lives in. And the voice-over finishes: "Pregnant mothers, please don't smoke."

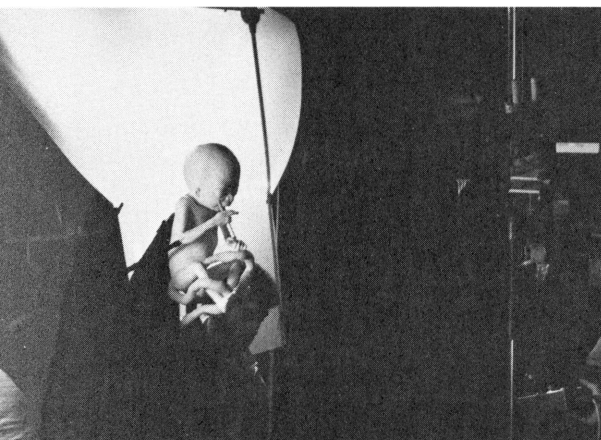
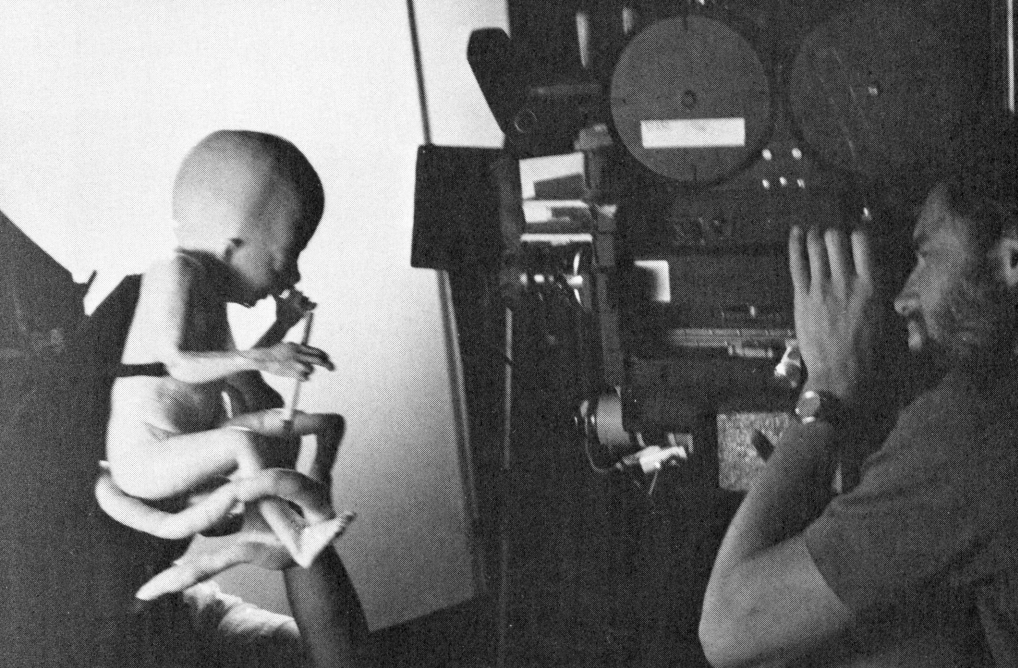
The 30 second spot just described was produced for the American Cancer Society by a talented and relatively untapped group of San Francisco Bay area filmmakers, modelmakers, and computer specialists brought together by producer Joseph Vogt (Rick Springfield's "Bop 'Till You Drop"). With a film and conceptual design education behind him, Vogt organized the majority of his film crew from the ranks of Industrial Light and Magic. It was with the abundant talents of these production people, director David Fincher, Midland Productions, and Monaco Labs that Vogt brought life to a most creative and technically challenging public service announcement.

Jerry Angert, director of broadcasting with the American Cancer Society, described the ad as "one of the most powerful we have done . . . We considered the fact that it would be controversial and the networks might not show it, but counted on the local stations to take it." And that's exactly what transpired. NBC and CBS chose not to air the graphic smoking fetus spot while CNN (Turner Broadcasting), ABC and its affiliates and affiliates of NBC and CBS elected to show the fetus spot.

CBS and NBC claim the spot is too graphic. An NBC spokeswoman



Tony McVey sets up sculpture in front of motion control camera. Above: Sculpture with cigarette as it appears in spot.



Mike Owens at Mitchell GC ready to shoot prepped sculpture.

cited "general taste considerations" as a deterrent to airing the spot. "It was the sight of the fetus that was especially shocking and we felt it was potentially offensive to our viewers," she was quoted as saying. A CBS spokesman said the network agreed with the "importance of the intent of the message," but said that the spot was "far too graphic for broadcast on CBS." An ABC spokesman, however, said the message put forth by the spot was "important for pregnant mothers to understand." The network felt that, while it was "different visually" from the usual fare viewed on TV, it contained no material that warranted its ban from the airwaves.

The two foot long fetus is starkly realistic to the camera's eye. Sculptor Tony McVey is the main force behind the creation of the image that caused discomfort at two major networks. With four years of work design-

ing and sculpting parts of human figures at the Natural History Museum in London, McVey's background made possible a realistic fetus form from plasticene, an oil clay.

Joe Vogt provided McVey with the book, "A Child is Born," to aid him in the design of the most important element of the spot. The two foot long fetus McVey sculpted was next cast in a gypsum cement mold, a hi-grade plaster of paris. The fetus mold was cast in eight pieces, known as undercuts, and baked for five hours. Once baked, McVey was ready to apply talents cultivated on productions of *The Dark Crystal*, *Gremlins*, and other Lucasfilm productions. On these productions, many creatures were sculpted, cast and fit with armatures for eliciting movement in the arms, fingers, legs, and head. It was the armature technique that allowed the movement of the cigarette to the lips of the fetus. And it was this gesture which has been the major object of controversy with the spot.

With a mechanical aluminum joint, comprised of a ball, socket and hinge system, McVey assembled the cast pieces around the partial armature. An exit point for the armature cables was made at the elbow. Both the hands and feet of the fetus were wired for positioning purposes while two fingers of the hand that held the cigarette were cable operated via the partial armature system.

The next step in bringing the figure to life was to transform the eight piece mold into a humanlike context.

Foam latex, a synthetic based material known also as gum latex, was applied to the mold for the outer layer. Fiberglass layers then made up the structure of the head and rib cage, both hollow. The legs and nonmoving arm consisted of foam latex only.

Sculpted details of the face and mouth added the realistic dimensions that breathed life into the fetus. With a hole placed at the upper back, a hand was able to move the mouth and lips of the foam latex face to provide the simulation of a mouth inhaling smoke. McVey completed the fetus' looks by painting it a flesh tone and detailing the entire figure.

Puppeteer Bob Cooper added his talents to the image by designing an oversized cigarette. A large cigarette was necessary since a fetus is extremely small at the six month stage in its life. The end of the cigarette was made to glow within the womb by use of a rheostat controlled light. The smoke that the fetus exhales was blown through a tube leading up through the back of the fetus to the mouth. Shooting the fetus became an even more challenging endeavor, requiring three puppeteers to bring it to life.

Joe Vogt began the project by approaching the American Cancer Society with several storyboarded concepts conceived by designer Chris Green. Working without an advertising agency, Vogt secured a contract with the American Cancer Society for the \$25,000 production costs.

With the fetus in hand, the next step of the production would follow: Filming the fetus within the placenta. For this stage of production Midland Productions of Richmond, CA and Dr. Steven L. Horowitz, PhD, general manager of Midland at the time of the production, were contacted by Vogt. At Midland's motion control and special effects facility, Vogt's production was offered the computer enhanced, motion control camera system to bring the fetus and its environment alive.

Steven Horowitz was commissioned by Midland to design a computer hardware and software system for the motion control camera system that meticulously controlled the camera movement from the first close-up to the final full shot of the fetus within the 30 second spot. A DEC LSI-11 microcompu-

ter is the main ingredient in Horowitz' computer program design. The micro-computer synchronizes the simultaneous motion of up to 16 axes of motion. For the shot of the fetus only seven axes of motion were controlled by the computer: roll (pan/tilt), vertical, horizontal, track, pull down shutter, focus, and model pan.

The software, as written by Horowitz, is programmed to allow control over each axis of motion. As Horowitz describes, "The camera movement is programmed with a series of six different points (key frames). At each point you define the position of every axis of motion including focus. The software program allows stopping the movement at any point to fine tune an axis of motion."

In a period of two days, the motion control equipment shot the fetus movement for a total of 12 takes. Coordinating the 'burning' cigarette, the smoke exhaling from the mouth, and programming the motion control movement to time well with the fetus movements took some precise work.

Camera operator Byrne Pedit programmed the motion control camera using Horowitz' software. Having focused the Mitchell GC 35mm high speed camera between one-half and one-inch from the fetus, Pedit plotted out in the computer the direction and movement of the camera according to the desired frame positioning.

The camera's first position was designated next to the fetus, perpendicular to its face. The final camera position was to be 12 feet back and directly in front of the fetus. Between the first and final camera position, Pedit was able to program the camera's movement along six different points. Inclusive in the seven axes of motion mentioned earlier, the pan axis of motion was converted to the roll axis of motion with the use of an arm mechanism attached to the camera. The arm mechanism was able to rotate 90 degrees to achieve the end position in front of the fetus.

The Mitchell GC camera was equipped with a Nikon 20mm lens and mounted on a flexible mounting system. The camera shot the fetus at 48fps with an aperture of F8. A number 6 Harrison filter was used for the desired soft texture effect of a fetus floating in

the placenta. By using a 3/4 backlight design some undesired highlight effects on the foam latex skin resulted. To tone down these highlights, talcum powder was used.

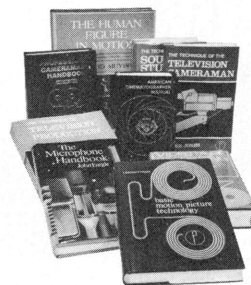
Director of photography Michael Owens was in charge with Pedit collaborating on the lighting design. With a background of six years at ILM on productions such as *Star Trek*, *ET*, and *Return of the Jedi*, Owens was certainly not new to lighting and shooting models. The main difference, was that the fetus was no Lucasfilm fantasy creature. According to Owens, lighting the fetus was "... like lighting a human or humanoid. It was a more realistic romantic situation compared to ILM models ... it was enjoyable because it had elements of both (human and model) ... natural lighting for humans and model lighting."

A heat-shrunk, clear plexiglass half-dome was filmed separately from the fetus. Six takes of the dome image were shot over a two day period. Once the half-dome was partially backlit, it appeared too jewel-like for the placenta image. To reduce this glistening appearance, the dome was painted entirely black, streaked with gray and white paint and dusted with talc in certain areas. Specific highlights on the model and dome resulted from the painting techniques while the use of a heavier Harrison diffusion filter softened the overall image. The dome footage was also shot at 48fps.

Midland Productions' optical system is a computer controlled 8 axis aerial image printer equipped with Nikkor lenses and a Graphone designed lamphouse. The computer controlled printer created a married composite print of all the elements of the spot: fade-in, fetus and dome footage, American Cancer Society title, and the fade-out. Eastman 5294 was the original camera stock shot for the fetus and dome footage.

Interpositives of the fetus and dome negatives were contact printed for the first stage in the optical process. The fetus was printed in combination with a high contrast 'garbage' matte which served to remove extraneous objects from the frame (i.e. c-stands, elbows and heads of puppeteers). These IP's were then printed sequentially onto a dupe negative. At

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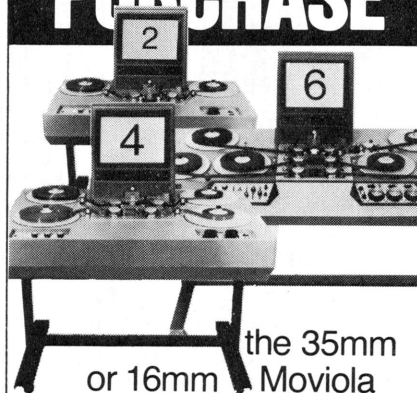
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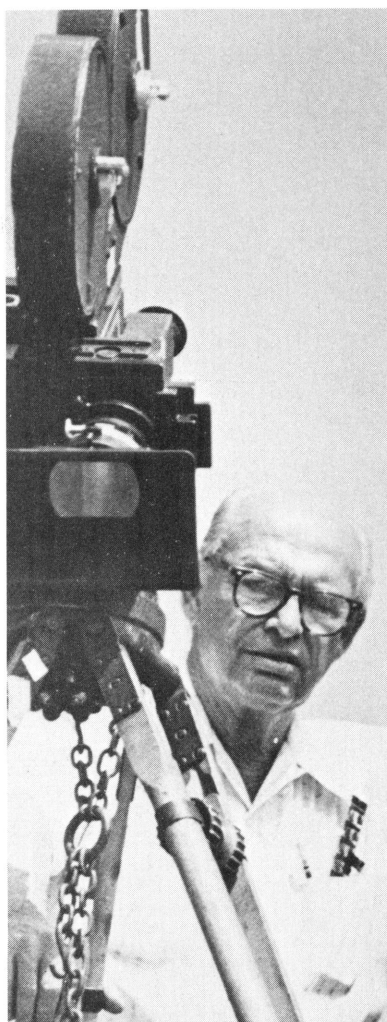


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this stage, states Pedit, "Additional filters were added to the dome IP to accent the translucent quality that we were looking for in the married print."

Once the dome image was optically composited with the model image, it surrounded and separated the model from the black void in the background. The desired effect of a fetus floating in the womb had been achieved.

The third and last element to be printed on a dupe negative was the artwork for the American Cancer Society title. This was shot on a rotoscope camera using high contrast Kodalith film. All negatives and workprints were processed by Monaco Labs, San Francisco.

Joe Vogt completed the American Cancer Society spot by working closely with the talents of actress/announcer Jan Thomas and music composer Ren Klyce. Klyce played all instruments including the Yamaha FM digital synthesizer which provided the progression of three very consonant chords opening up the spot. In the mix these chords were crossfaded into dissonant chords at the moment the camera pulls back to reveal the fetus drawing the cigarette to its mouth. The third track consisted of a simulated heartbeat produced by a Profit 5 synthesizer.

The American Cancer Society 'smoking fetus' spot has gone on to win six major awards including the International Broadcasting Award from the Hollywood Radio and Television Society. It has also been nominated for an ADDY award presented by the American Advertising Federation.

Says Irving Rimer, vice president for public information at the ACS, "It is one of the most impressive, effective spots ever done in the anti-smoking campaign." △

In addition to writing articles for various trade publications, Bruce Mink presently works in San Francisco on features, commercials, and industrials as set designer and property master. His most recent credit as property master is for Where Are You Going? produced by Martin Rosen, Nepenthe Productions.

Louma Crane and William Friedkin

by Ric Gentry

Actor William Peterson, portraying young secret service agent Richard Chance in William Friedkin's production of *To Live and Die in LA*, positions himself outside the protective iron parapet of the Vincent Thomas Bridge in San Pedro, California, and then looks down at the swift currents of the Los Angeles river 20 stories below. Viewing Peterson from behind and surveying the distance of quays, warehouses and oil refineries is a Panavision camera mounted to a 23 foot, 8 inch extension of the Louma Crane by Samcine. Friedkin comes forth, consults with his actor, and then resumes his place behind the monitor that reports, with 100% viewfinder accuracy, the framing of the camera that will soon commence to operate by full remote control.

As the director signals, the arm of the Louma swings out over the water and pivots the camera so that it looks back at Peterson, the structure of the bridge, and random traffic passing indifferently from behind. It was then that the shot began. The arm went directly upward in a smooth arc toward the actor, glimpsed him in a momentary closeup to heighten the anxiety, then rose above and circled behind his head while keeping him in view, held for a few beats, then moved forward beyond the actor and peered down, now excluding Peterson from the shot and showing what it is he sees 200 feet below: a battered freighter emerging slowly from under the bridge. In effect, objective and subjective points of view have been fused within a single fluid but vertiginous shot.

"Conventionally," begins Andy Romanoff, director of Advanced Systems for Panavision, distributing agent for the Louma in the United States, "what you'd be forced to do in a shot like this is probably pick up the



Louma crane on the job.

actor with a long lens from a distance. But long lenses don't have the same feel. With the Louma, you're with him and your stomach drops out when you see how far he's going to jump. And there's no kidding, nothing left to the imagination, because all of the spaces that are important here have been related: the great drop-off, the height that this character's at, the fact that he's standing on this enormous structure. It's the first shot of the film and the guy's

going to jump and you don't know why. The way the shot is structured let's you *feel* it, not just surmise it. It's real film grammar."

To Live and Die in LA, an SLM Production to be released through 20th Century Fox, is a contemporary crime thriller based on the novel by Gerald Petievich featuring Peterson as FBI agent Chance, John Pankow as fellow agent John Vukovich, and Willem Dafoe as Rick Master, a counterfeiter



Andy Romanoff and Robert Feldman, key grip, set up shot.



Jane O'Neal

the agents pursue through the sordid streets, back alleys and industrial areas of Los Angeles. The opening shot immediately establishes the mood, the style, even the moral ambiguity of the entire film, Friedkin's 11th feature.

The Academy Award winning director had never used the Louma before. It first came to his attention while watching an Australian auto commercial, where the camera watches a driverless car race across a dry lake bed from changing but continuous positions both inside as well as outside of the car, as if virtually from some kind of irregular orbit of observation. "It was the only shot I'd ever witnessed that I couldn't figure out how it was done," Friedkin says. "I kept thinking, 'Animation . . . animation . . .'"

When Friedkin later discovered it was in fact the Louma that had performed the one-take commercial, he began to consider what possibilities such a device might offer *To Live and Die in LA*. In particular, Friedkin was interested in what the Louma might lend to an intricate car chase sequence he'd planned.

"The concept of the sequence is to do it as a Kafkaesque chase," he says, "a kind of claustrophobic sequence where they drive out on to the freeway against traffic. It won't be like *The French Connection* with a lot of exteriors, impediments and collisions. Here it has everything to do with point of view, how the characters perceive what's happening. The camera should actually wend its way through

the most difficult places where we may, from time to time, combine an outside with an inside perspective. It was those ideas that got me interested in the Louma."

Additionally, cinematographer Robby Muller, recently of *Paris, Texas*, had devised the shot concerning the Vincent Thomas Bridge. Muller, not easily enamored of hi-tech equipment, had never previously worked with the Louma either. "I couldn't do the shot with the Titan," he explains. "I couldn't circle around the actor and then come closer. We needed a whole different capability."

With these visuals in mind, then, Friedkin and Muller arranged a meeting on the set with Romanoff through veteran assistant director Chuck Meyer to demonstrate the diverse, unprecedented talents of the Louma.

"We soon found," Muller remarks, "that there was no other way to get the shots we wanted."

The Louma is the very first and, to date, only remote controlled and modular camera crane. It takes its name from Frenchman Jean-Marie Lavalou and Allan Masseron, who invented the crane in order to photograph and maneuver through difficult, small confines within a submarine while making a documentary for the Navy. Eight years of development with David Samuelson of Samuelson Film Service finally put the Louma on the market by 1976, later in the United States by 1978, where the Louma won an Academy Award in 1981 for Special Achievement in Film Science and Engineering.

Though not meant as a replacement for all cranes and dollies, the Louma nonetheless represents a considerable improvement over conventional units where portability or irregular surfaces are concerned. Most important, however, and what makes the Louma altogether revolutionary, is its ability to obtain perspectives that are impossible for an operator, behind the camera, to otherwise assume and, moreover, *to move* forward and backward, up and down, and turn 360° in any direction with utmost fluency and high speed. At times the perspective of the Louma seems to be one of a camera mounted to a gyroscope floating in space.

The Louma crane arm is composed of individual aircraft-quality aluminum sections which insert piece by

piece at each end. This allows the length of the arm to conform to the specific needs of the shot, and may vary from four to 25 feet.

"The Louma is an erector set of modular pieces that go together in many, many different configurations to best make the shot you're trying to get," says Romanoff. "This is not just a crane with a remote control head. It's much more ambitious in concept and has far greater capabilities. The traditional equipment that is used for filming is procrustean in nature. You make the shot work with the equipment you have. The Louma does the reverse. It allows you to make the equipment adapt to the needs of the shot."

The smooth, unrestricted movement of the Louma is attributable, in part, to the camera mounting head which remains fixed and level while the boom arm is tilted in any direction, from virtually straight up to straight down. Mounted on an Elemack Hornet dolly, for example, allows a tilt of 60° above and 65° below the horizontal throughout a 360° pan, since there are no vehicle chassis or driver's cab to restrict the motion.

The Louma further differs from the traditional crane in that it operates without a link arm to ensure that the camera platform remains parallel to the ground. The patented system of linkage within the arm itself increases the angle of tilt up or down, yet keeps the profile of the arm attenuated, allowing it to move through small, limited spaces whenever necessary.

The Louma will accept almost all standard 65mm, 35mm and 16mm cameras as well as most of the new generation of portable color cameras for television.

Gyro-assisted servo-motors, activated manually by two palm-sized wheels mounted on a console, control the pan and tilt movements. This arrangement is identical to a camera mounted on a regular geared head, except that the operator is removed from the camera and composing the shot via a TV monitor rather than a viewfinder.

To pan the camera right, then, the operator turns the left hand wheel in a clockwise direction. Similarly, the right hand wheel will tilt the camera up and down. The speed of both movements is determined by the speed with which the respective wheels are

turned. "That's an important feature of the Louma," says Romanoff, "because none of the subtle or delicate movements that the camera operator is accustomed to are sacrificed. He does it here just as he's always done it. A joystick technique had at one time been experimented with, but when it was discovered that follow shots were not always accurate by camera operators used to geared heads, it was dropped pretty quickly."

At the same time, the relative speed of the camera movement to the operator's handle movement can be geared up or down electronically. This is especially valuable in choreographing activity in a shot that moves abruptly and/or in close quarters. By controlling the power supply, the speed ratios may be altered over a much wider range, from very fast to very slow. The use of such an electrical system eliminates backlash (often the case with mechanical gears while following during a shot), or any slippage at the apex of the geared quadrant.

Virtually all the electrical connections to the camera, e.g. for power, the monitor, or the control motors for both the head and the lens, are transmitted through the boom arm by vertical and horizontal annular contact rings. This enables the camera to pan 360° without impediment, go from a lateral to a straight down position, and even complete a 360° tilt.

When the camera is positioned on an Elemack or other type of dolly, the entire ensemble may be tracked, crabbed or maneuvered with a rotating motion over any surface. If elevated by a platform that puts its fulcrum at some 20 feet high, the Louma can effectively operate at 45 feet up or from a lens height of four inches from the ground.

If less than a four inch lens height is required, as when photographing miniatures, a Samcine inclining prism may be added to the camera lens so that the optical axis is reduced to approximately one inch without image inversion, forfeiture, or diminished optical quality or aperture. The Samcine inclining prism adapts to most any camera or format.

Viewfinding is achieved through a sensitive CCTV camera fitted with a nuvicon tube looking directly at the ground glass or attracting an aerial image.



Peter Sorel

Louma cranes are now in operation throughout the world and freely incorporated into television productions, commercials, rock videos, and such feature films as *The Tenant*, *Moonraker*, *Looking to Get Out*, *One from the Heart*, *Best Little Whorehouse in Texas*, *1941* (where Steven Spielberg used the Louma throughout the months of production only eight weeks after the Louma was introduced to the U.S.), *Raiders of the Last Ark*, and, more recently, *2010, A Chorus Line* and *Murphy's Romance*.

Images throughout these productions would have been impossible without perspectives offered by the Louma. In *1941*, for example, a \$35,000 gimbal was built to simulate the flight of two airplanes. It was later discovered that the motion of the gimbal wasn't smooth enough to satisfy the director. By mounting the camera to the Louma, however, and maneuvering it quickly but evenly, in great, fluid Immelmann turns against a gray cyclorama, the illusion of flight was restored.

Another instance for *1941* was in photographing miniatures. The lens of the camera could be lowered to within a half-inch of the floor, approximating four feet from the ground when

The long arm of the Louma.

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intercut with realistic, full-scale footage. By swinging the Louma arm through the elaborate miniatures, intricately choreographed tracking shots were executed.

These kind of shots, as vital and unusual as they were to the production, were actually quite standard for the Louma. Less so was its application for Peter Hyam's *2010*.

"We had to narrow the Louma down for the hallway shots in the Soviet airship," explains George Michael Brown, Louma technician on both *2010* and *To Live and Die in LA*. "We had to narrow the track. We dropped the centerpost down to 18 inches and had the camera at least 6 inches off the ground, shooting up most of the time. And these were fast movements down the hallway, 20 to 25 feet in just a couple of seconds. It was one of the toughest shots I ever had to do."

Friedkin, too, was concerned with speed for *To Live and Die in LA*. As he sat down with Romanoff, it was one of the first questions he had to ask. "Can you operate at 50 mph?"

"Speed is not the challenge," Romanoff replied. "What we have to calculate are changes in direction, starting and stopping quickly."

"That we don't need," said Friedkin. "But what do you put the Louma on when you're driving?"

"Any of the better camera cars," Romanoff suggested. "The driver's your choice. I want to tell you though what the Louma does real well. You mentioned the claustrophobic feel that you're after, and what we do is skewer things. Because of the modular quality of the crane, we can go through and over things, into very tight places, very easily. Say you're trying to get between two snugly parked cars and you walk sideways, shuffling through. We can do that without any problem."

"Did you see *Outland*?" Romanoff continued. "Remember the scene where Sean Connery is running across tabletops and the camera is tracking with him at his feet? Louma shot. Put the track out at the side of the tables, parallel to the subject, and the arm out from there at the exact length to let the camera follow. All the broken field is visible to the lens, but the camera doesn't have to deal with the traffic."

"Everything is done from a control area, then," Friedkin asserts. "No one rides the camera at all."

"That's right."

"It's all controlled at the panel there."

"There's a grip at the end of the arm," Romanoff explains. "If you're dollying with it, obviously a grip has to push it, but all of the camera moves are remote."

"What about the precision of the monitor in terms of framing?" Friedkin asks.

"100%, real frame lines."

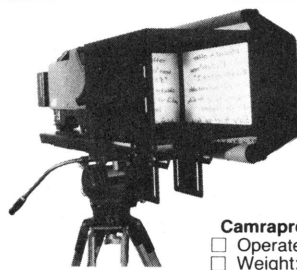
"And you're judging focus off the monitor."

"We do two things," Romanoff says. "We give you a monitor on the side looking at the focus scale of the lens, so when the assistant is operating the remote control and he turns the knob, he sees the lens actually turning. What we recommend is that you do what you normally do with any shot, and then we try to have the operator and the assistant positioned in such a way that they not only see the monitor, they also see the camera. Most guys try to work at the operator's console, or approach the camera and see where the camera is in relation to the action."

On a cool sunny morning in mid-February, at a freeway underpass near downtown LA, Friedkin designed a shot for the Louma that not only combined people in motion, but also cars in motion.

The Louma was positioned on an eight foot platform at the edge of a declination parallel to the highway with the arm extended about 25 feet. Of the 44 feet of rise available, 40 of it would be used, elevating the camera from within the decline to a point of view above the 20 foot viaduct, a total arc of about 50°. After a mere four rehearsals, Friedkin and crew were ready. The camera viewed Chance in his car pursued up an access ramp, run off the road and down into the gully, completely pivot 180°, then rose to reveal a firing marksman, first stationary and then running, along the viaduct above, all in 40 seconds.

One of the advantages of the Louma is its portability and the simplicity with which it is assembled. Each section of the boom arm is light enough to be



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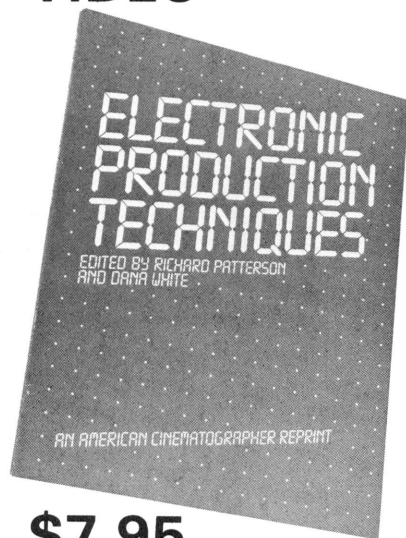
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carried by one person. The entire package is transported from location to location in lightweight aluminum cases. No one piece is longer than six and one-half feet or weighs more than 65 pounds. Only a modicum of time is required to set up, shorten or lengthen the arm, or to break it down and pack it.

Robby Muller adds that the Louma not only spared the production time and expense, it helped accelerate the story by providing key narrative information. "Often shots are made to fool the eye," he says. "In this one, it looks like a pan, but suddenly you're in the air. Now, you can make shots that throw people out of their seats, just confound them, but if (the shot) doesn't do something for the story, it's meaningless.

(To complement these stylistic aspirations, Muller is employing what he considers "straightforward" cinematography, solving problems with light rather than with filters, and augmenting the terse realism with hard lenses by Cook and Zeiss. The stock is Fuji 8511.)

"Here we have a whole combination of things," Muller goes on. "That the character is followed by a car, that he goes out of the gully into traffic, and that there's a man with a rifle on the overpass. It all works with the style of the film: the immediacy, the energy, the surprises."

Ric Gentry is a freelance writer and filmmaker in Los Angeles.

William Friedkin

By Ric Gentry

A filmmaker renowned for the energy and vigor of his images, William Friedkin provides momentum to the production and spontaneity to his shots by often printing the first take and minimizing coverage. In the first eight weeks of *To Live and Die in LA*, nearly 90% of the shots were achieved with a single camera take.

Friedkin's background as an award-winning documentarian from Chicago no doubt influences his penchant for such immediacy. Films such as *The French Connection* (AA Best Film, Best Director 1972), *The Exorcist* and *The Sorcerer* often combined hand-held camerawork with dynamic montage for extraordinary action sequences. Friedkin's dramas then, at their best, suggest a sense of having been "found" or witnessed, rather than made. Environment, furthermore, always takes precedence over the literary preoccupations of the script—in effect compensating and/or augmenting the script with visuals inspired by location in the moment.

To Live and Die in LA is no exception. Co-written with Gerald Petievich from the latter's novel, Friedkin has virtually made of Los Angeles a *dramatis personae*, an enclosed world of brute realities and moral dissolution.

By mid-January, six weeks into the principal photography, he began to reconsider whole sequences based on his cumulative experience of the production thus far. He became particularly curious about the Louma crane when he perceived that a continuum of multiple perspectives of a given scene might accelerate the story line as well as enhance the talents of his actors.

On a very busy day at the location on 6th Street in downtown LA, Friedkin took time out to discuss the production, his working methods, the Louma, and his films in general.

"The style of the film is virtually documentary," Friedkin said. "It all looks like it's just happening. Scenes take place in the middle of the streets where the people don't know what's going on, have very little reaction time.

"It's like the structure of *The French Connection*, only more complicated. *The French Connection* was originally designed like this film and then I took out nine scenes while I was editing. I took out the complexity, because at the time, I was afraid. I wasn't really sure how far I could take the audience. So I looked at the complexity of the story in the editing room and I backed out on it and cut it down to what is virtually a chase picture."

The director recalled that the cuts in question totalled about half an hour. As a result, he believes, "the film is stripped of character." Now Friedkin wants to give his original concept another try.

"I thought it was over people's heads. I have a reel of these scenes, and I went on a lecture tour of colleges across the country and I added them back when I showed the film. It completely changes the flavor of the story. It deepens it. To me, the film is basically a chase picture now, but it wasn't designed that way. It was designed to show the conflicting lifestyles of the policeman and the criminal, and to show they were walking a thin line, and the thin line between the policeman and the criminal was blurred. And all of the scenes I cut were basically illustrative of that. This film is constructed that way. I'm going back to the original construction.

"The thing that interests me most about people is the thin line between right and wrong, good and bad. The cop is very often more corrupt than the criminal and uses methods that go over the line. And the criminal has civilized characteristics and qualities that the cop doesn't have. So basically, it's a study of the criminal mind on both sides of the law. This film is about greed and morality in a way. It's based on a true story that was written by a secret service man who changed the names when he novelized it. *To Live and Die in LA* is a true incident.

"In *The Sorcerer*, there were no Louma cranes. We had to figure out the shots for hand-held cameras. The whole of *The French Connection* was done with an unblimped Arriflex about 90% of the time. The whole chase was done with cameras mounted to vehicles and hand-held. Every shot in *The French Connection* was designed. But if you'd have seen the rushes it would not have been exciting. The shots were all good, but in and of themselves there was nothing dangerous, nothing spectacular. It was the editing, the combination of the way the shots were put together, the overall dynamic; but they had to be designed. If you'd lose one frame or add six frames to a shot, something would go wrong. It was a matter of frames, really. In the very next frame of a shot, the shot was no longer effective. Taking the car in the



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chase from point X to point Y was OK, but to go to point Z was not. Something was lost in the dynamic. It was done over a two week period. It was shot as this one is being shot, with a small unit where everyone could contribute something. Everyone had ideas. The whole thing was not just my idea. There'd be people just standing around, and they'd say, 'How about this?' And I'd say, 'Yeah, let's do that, great.'

"Film never belongs to one man. I think the whole *auteur* theory is bullshit. There's not one set that I've been on where there haven't been ideas from everybody. The directors whose work I admire most are guys who take advantage of the ideas of other people. Because about this time in the production I get really, really blindspotted. I lose focus on what's happening. I run out of shots in a way. I run out of ways to do a scene. I start to think it's all boring or it's all been done before. And it's about that time that I've got to get juiced up in some way. We're doing a scene on Friday that I've had in my mind for months, and now I realize that I haven't a clue as to how to do this scene in a way that will fit into the direction the film has taken.

"The film begins to get away from me like a wild horse and starts to take a direction of its own. You begin to see certain strengths that the actors have and certain weaknesses that you've got to play to and against. You see certain strengths that the cameraman has or weaknesses that I have in terms of pushing an actor. I can let an actor go too far, and if I ever let him go that far again I can already see in the rushes that it will look like acting. So you learn these things about six weeks into the production and then you're either stuck with your pre-planning and you live and die with it, or you start to rethink it. You say, this guy's strength is when we do *this*, and let's maximize it.

"For example, I think the lead actor is effective in two ways: when he's moving, when he's flying all over the place, because he's an athlete, or in a big close-up. In just straight medium shots, his power is diminished. When we see him real close on the screen he's effective. When he's moving around he's beautiful. It's very cinematic."

Friedkin noted that it's not always possible to change shots to ac-

commodate or adapt to a performer's strengths.

"You still run into the story," he explained. "Then very often he runs up against the other actors, people in the scene with him. There's the concept of trying to do a film with a lot of cuts, but also keep the characters on screen in the same shot at the same time. And how do you do that and still give this guy his close-ups? That's one of the things I'm warring with right now. I'd rather see the actor close, but if I do that, we've got to do a close shot of the other actor and then we're back into conventional cutting."

By utilizing the Louma crane, Friedkin hopes to achieve the maximum effect of dramatic close-ups without sacrificing fluidity of camera movement.

"We're trying to combine both. I frankly haven't solved that problem at this stage of the game. That's what keeps me awake nights now. To get this actor effectively into close-up and still keep the movement of the rest of the film. That's what I'd like to see the Louma do, because I've got a feeling the Louma can be close on him and still move with him and so do montage within the frame, and not overburden the cinematographer and the crew with painstaking logistics.

"See, we did a shot yesterday that I thought overburdened Robbie and the grip crew and the focus operator. We stayed on it longer than we had on any shot. I just wanted to see if it would work. There were any number of conventional ways to make the shot that would have been better for the actors."

Friedkin had not yet seen the dailies of the shot.

"The editor tells me it looks good," he said. "My hunch is that it will look very good technically and that I should have done it in close-up," he laughed. "To be very honest with you, I think that's the way it is. But it's always a gamble. Every shot is a gamble. It's where you put the odds. It's like roulette, because every movie is one set-up at a time. Each set-up has its own dynamic. It's a gamble I must say I've lost a few times."

It was pointed out that Friedkin had won a few times, too.

"Yeah, but when you win it's luck," he chuckled. "When you lose, it's usually pre-planning." △

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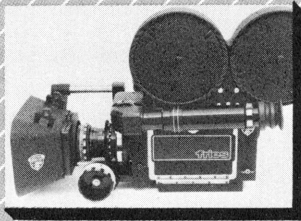


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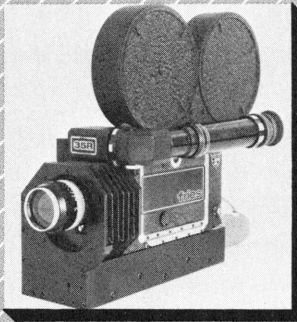
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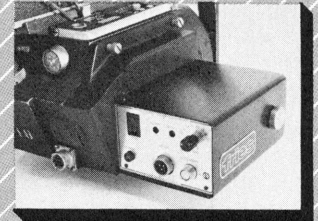
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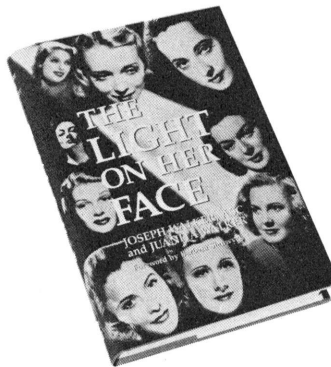
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Disney Automatic Projection System

by David McDougal

Life is hard on motion picture prints. After only several hundred runs on a conventional projection system, the ravages of old age begin to show: scratches, specks, jitters from worn perforations. After 500 runs, most prints are worn out due to the effects of friction, dust, torque, and changing humidity.

In 1965—at the instigation of Walt Disney himself—a group of engineers at Walt Disney Pictures took up the challenge of extending film life. They succeeded dramatically. The Disney automatic projection system increases a print's usable life from several hundred to 10,000 to 15,000 runs. And even at that threshold, the reason for retiring a print is the fading of color dyes, not wear and tear on the actual film base.

In the past, this projection system was reserved for exclusive use at Disney facilities. But now, sensing an untapped market in both government and the private sector, Disney's Technical Engineering & Manufacturing group has begun to make the systems available to national parks, international expositions, corporations, and anyone else who has the need to run the same film many times a day, all year long.

"The design effort for the projection system got started because Walt wanted to develop some way to store film for the shows at Disneyland," says Don Iwerks, manager of Technical Engineering & Manufacturing and son of Ub Iwerks, boyhood friend of Walt Disney and the gifted illustrator and animator who is



credited with the creation of Mickey Mouse. "We felt a sense of urgency, because film breakage and maintenance at Disneyland were costing several thousand dollars per projector."

Experimenting with different ways to treat the film more gently, Don Iwerks, his father, Ub, and chief engineer Bob Otto identified five design goals for the new system. First, the image area of the

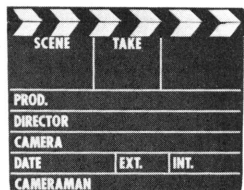
film should never touch another surface. Second, the film should not be subjected to undue tension or torque. Third, the film should be protected from dust. Fourth, the film should make a minimum number of small-radius turns on its path through the projector. And fifth, the film should be in a humidity-controlled environment.

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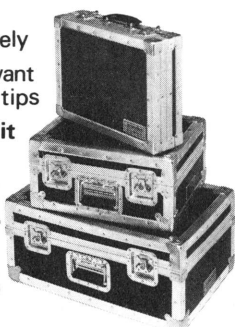
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system which uses banks of projector-driven sprockets to hold and drive nearly unlimited quantities of film in dust-free and humidified steel cabinets with glass doors. The film is indeed stored inside in such a way that the image area—or any other area, for that matter—never touches another length of the film, as it would in a conventional reel-to-reel system.

A typical storage cabinet for 35mm movie film is a rectangular box 50 inches wide, 30 inches deep, and 78 inches tall. It resembles a large shoe box standing on end with the wide surfaces forming the front and rear walls. Most of the front wall is a set of glass double-doors. Evenly spaced across the width of the box, near the top of the doors, are six parallel axles running between the front and rear walls. On each axle is a bank of 15 sprockets, which are spools 4 inches in diameter custom-machined from aluminum with double rows of teeth to fit the perforations in movie film. These sprockets are driven by the projector's motor through a reduction gear and a chain resembling a bicycle chain.

Across the bottom of the cabinet are another six axles parallel to the six at the top. These lower axles support banks of 15 spools per axle as well. These lower spools, however, are neither motorized nor toothed.

The film is a closed loop which leaves the cabinet at the top, crosses to the projector under a long translucent plastic guard, travels past the lamp, and re-enters the cabinet. Inside the cabinet, the film is laced over the motorized sprockets and unmotorized spools one at a time along the first bank, then on to the second bank where it repeats the process, and so on, until the cabinet resembles an industrial loom with warp-threads made of film. One such cabinet holds 10 minutes of film, and cabinets can be hooked together to add capacity until the motor of the particular projector reaches its limit and cannot drive any more banks of sprockets.

With this system, the projector starts up slowly so that the film isn't stretched by abrupt acceleration. Once it is up to speed, the projector drives the banks of sprockets, whose teeth move the film along its predetermined path to the projector. The film path in the projector has been simplified to eliminate the many twists and turns that, in conventional systems, fatigue the film and lead to significant wear. The film then returns to the cabinet, which is kept at an ideal 50% to 60% relative humidity.

"That's what film prefers," says Don Iwerks with an air of someone who has spent decades studying the likes and dislikes of film.

When Walt Disney first saw a prototype of this automatic projection system in 1966, he was returning to his office for a meeting. "My dad asked him if he could show him something," recalls Don Iwerks, "and Walt said sure, if it didn't take too long. Well, Ub started the machine up, and soon Walt just stood there, asking questions and grinning like a kid in a candy store. He watched it for a half an hour, then walked over to my dad and put his arm on his shoulder, saying, 'Ub, this is real progress! Can we adapt it to Circlevision as well?'"

"I'll tell you, we just walked out of there like Cheshire cats," says Don Iwerks about this successful meeting. "And I still don't know what became of Mr. Disney's appointment."

Today, the Disney automatic projection system runs 16mm, 35mm, and 70mm film at Disneyland, Walt Disney World, Tokyo Disneyland, and EPCOT. At EPCOT alone, 120 such systems are operating 12 to 16 hours per day, seven days a week, for a total yearly operating time of approximately 6,500 hours—completely unattended, other than a brief check each morning. "And these systems have proven to be 99.8% reliable," notes Don Iwerks.

While the savings in film costs are quite impressive—a

color-matched set of prints for a nine-projector Circlevision show can cost around \$20,000—the system also saves maintenance and supervisory costs, because it is almost entirely automated. In most applications, according to Iwerks, the Disney automatic projection system requires only one person to introduce the film and to push a single start button.

In an experiment to find the limit to film life with the Disney system, Iwerks ran a single print 150,000 times. The color dyes faded, as expected, but neither the print nor the projection system showed any significant wear.

Iwerks declares: "I've been accused of building the Rolls Royce of projection systems. People say, 'Your projectors would still be running after the building falls down!' But that's the kind of reliability we want—to make systems that last and do the job right, time after time."

At present, two sites outside of Disney have used the projection systems. One was the Union Pacific pavilion at the Louisiana World Exposition and the other is the visitors center at the Mormon Church's Salt Lake City temple. The Technical Engineering & Manufacturing group is now installing a Circlevision system of nine automatic projectors for the Telecom Canada Pavilion at Expo '86 in Vancouver, British Columbia.

When asked to assess the prospects for marketing the Disney automatic projection system, Don Iwerks replies, "We've literally just started. But the need is there. And we've got proven machinery. The prospects look good, very good."

In September

Great white sharks, treasure beneath the sea, singing with a humpback whale, riding a manta ray—these are but a few of the adventures of *OceanQuest*, a five-part television series which airs in September. The adventure of making the series, by director/cinematographer Al Giddings, will be told in the September *American Cinematographer*.

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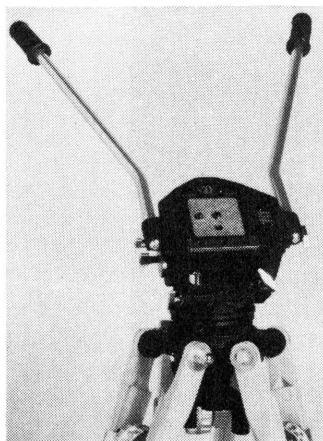
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Frank Stanley Teaches Overseas

by Bob Fisher

Frank Stanley, ASC, was remembering the past, and talking about his feelings of obligation to the future of the film production industry.

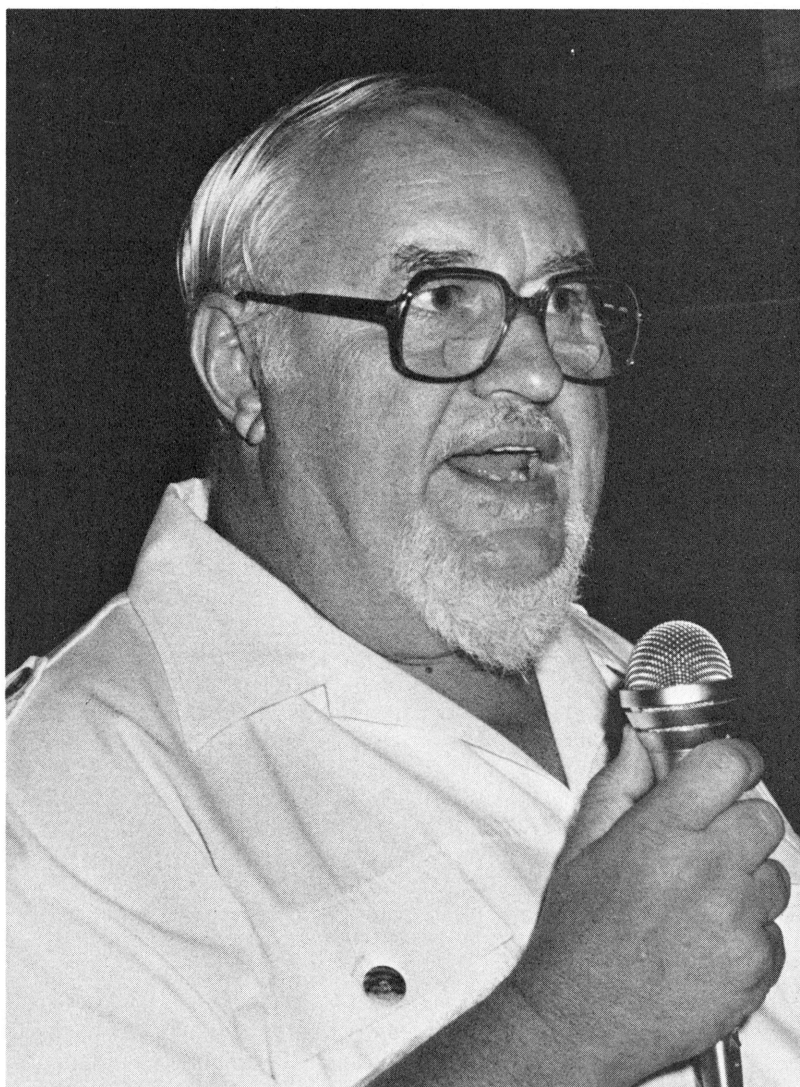
There was the time, for example, when Russ Harlan, ASC, was shooting *To Kill a Mockingbird*. "Russ decided to use Kodak Plus-X film instead of the newer Kodak Double-X film, which was considerably faster, because he felt more comfortable with it. He believed that he had more creative control with the film that he knew better," recalled Stanley, who was on Harlan's crew through most of the 1960s.

"It was a great experience. Russ was showing me how to underexpose here and shade there to establish a particular mood or feeling, and he was so familiar with Plus-X film that all he had to do was go out and look at a set, and he would know exactly what the lighting situation was."

Stanley continued, "We went through a period when our print light was 16 in the mornings and 19 after lunch. We thought that maybe it was the power company's fault. Then, on the third or fourth day, we came back from lunch, and Russ told me to get my light meter out; he had an idea."

It turned out that even Harlan's well-practiced eye wasn't seeing things the same way halfway through the day. It was a lesson that Stanley tucked away in memory, and has collected dividends on many times.

"I owe a lot to the people who helped me get started, and, most of all, to Russ, who taught me that my most important job as a cinematographer isn't getting the proper exposure; it's collaborating with the director to create an illusion which helps to tell a story," he said.

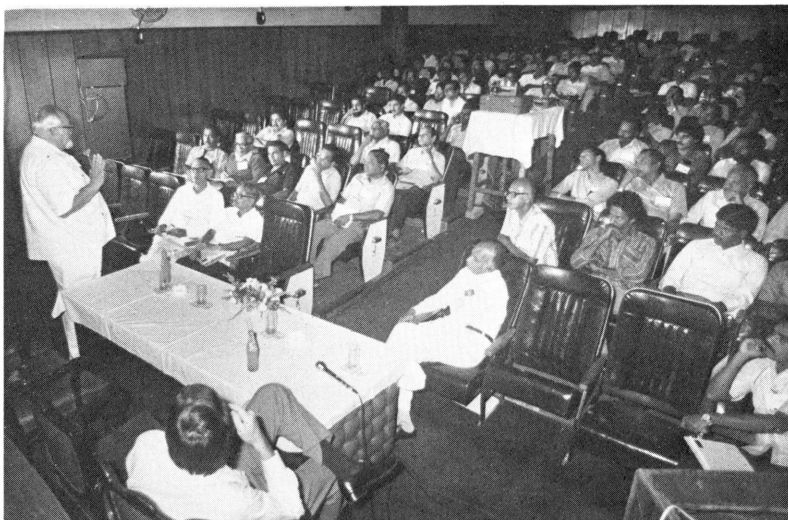


Frank Stanley, ASC.

Stanley is a man who takes debts like this seriously. He paid a big installment recently during a trip to India, Taiwan, Hong Kong and Thailand, where he conducted a series of five seminar/workshops for some 500 cinematographers, directors and other members of the production family. The main context of Stanley's presentations

as well as his observations about filmmaking in the countries he visited follows:

"I feel very fortunate to have ended up in this business. I'm originally from the East Coast, and I was in my second year of college, planning to be a lawyer, when I joined the Marines during World War II. I got married right



after the war, and so I had to earn a living. I was selling commercial refrigerators, earning \$50 a week, when a friend got a job at Technicolor. He was earning \$100, which I thought was a pretty good deal, and so I followed him there. After a while, I got to work on optical lineups for Technicolor three-strip pictures. I was in the right place at the right time. After the first Eastman color negative film was introduced, the movie industry started making big screen 'roadshows' to try to recapture the audience that it had lost to television. Every studio had its own big screen format—there was Cinema-Scope and Cinerama, VistaVision and Todd-A-O, and more. My breaks came when I got a job doing split-screen opticals for *The Ten Commandments* because of my experience at Technicolor. Russ Harlan took me on his crew just before he went to Africa to shoot *Hatari*. That was the first of four Academy Award nominations that Russ earned while I was working for him. The others were for *To Kill a Mockingbird*, *Darling Lili* and *Hawaii*.

"When I was the assistant cameraman on *Darling Lili*, we used the first production model of a Panavision PSR camera. The use of a reflex camera with long lenses and zooms really opened things up. Russ told me that he had arranged for me to do a film with Blake Edwards. As it turned out, that picture was never made, but he put the idea in Blake's head, and subsequently I had the opportunity to work with him on a number of films, including *The Wild Rovers* and *10*, which were two of my personal favorites. My

first feature was *Separate Peace*, which I did in 1970. I did Michael Cimino's first film, *Thunderbolt and Lightfoot*, as well as *Magnum Force* and *The Eiger Sanction*. Some of my personal favorites include *East of Eden*, which was a TV mini-series, and *Pas-sions* and *Dark Mirror*, two made-for-television movies. Basically, I like stories about people and relationships where the cinematographer can make a contribution."

The theme of the seminars Stanley taught concerned the role of the director of photography in the United States.

"I'm not going to make the mistake of characterizing all cinematography in the four countries that I visited. That would be like putting an elephant's tail in the hands of a blind man, and asking him what he is holding. However, for the most part, cinematographers in those countries, and sometimes here, are seen as technicians, who are mainly responsible for obtaining a picture-postcard-perfect exposure usually with no regard for the story or setting. They are rarely given the opportunity to make a creative contribution. There is rarely time allotted for pre-production planning. In fact, in many cases, two, three or four cinematographers will work on one picture because production is spread over months or years to accommodate the schedules of the stars."

The seminars were sponsored by Eastman Kodak Company and presented in Bombay and Madras, India, Hong Kong, Patia, Thailand and in Taiwan.

The cities chosen are all busy film production centers. In Madras alone, 470 theatrical features were produced last year. Yet, the most memorable films made in India during recent years, *Gandhi* and *Passage to India*, were produced by foreigners.

"I spent at least five days in each of these cities. This included at least one day at a typical production site, where I was able to see how the crew worked and could observe something about the relationship between the camera operator and director. I don't want to generalize, but that did give me some insight as to how people in a particular community worked. The camera sessions were the ones I really loved. These sessions lasted two days. I started out by showing *Dark Mirror*, and explained the same things that I had told the producers. The second day, I showed the film again, this time without the sound, and we took it apart scene-by-scene. I had an overhead projector, which I used to diagram master shots, and I showed exactly how we lit everything. On the first day I also demonstrated how I would shoot a test for an upcoming project. Actually we shot the same test twice and sent the film to two different local labs—then we viewed these tests on the second day of the seminar. I also had some very useful demonstration films produced by Ed Ortman, who works for Kodak's photo technology division. One of these was a series of scenes shot by Ortman, which was sent to seven different laboratories for processing. Given the same instructions, all of the labs produced almost identical results. However, when the processed footage was sent to a number of labs around the country with instructions to make the "best print," the results were very different. This effectively demonstrated that color timing can be a very subjective thing. It underlined the need for the cinematographer and color timer to work very closely together—a condition which was almost non-existent in most of the countries that we visited.

"Another demonstration showed a normally printed scene, and then the same scene was shown in series with the scenes progressively under- and overexposed and normal scenes intercut. This clearly demonstrated how subjective a 'look' can be since the normal scenes didn't look

right after the eye was conditioned to over- and underexposed scenes. All of this served to illustrate that while there is a best exposure index for 5294 film – as there is for every film – if you are looking for the cleanest, sharpest image, the photographer also has great flexibility. Photo Research Company also provided some very useful material about the evolution of light meters, which I used, and Tiffen helped me out with some effective filter demonstrations.

"In general, in most of these countries, there are no lab reports, or only rudimentary ones are used. Therefore, when the original negative is sent to the lab for processing, no one there has any idea of whether it is a day or night scene, or if the photographer is lighting for effect. The original negative is generally sent to the production company, where the editor – not a negative cutter – the editor – cuts it, and then it goes back to the lab maybe three, four or five days later for workprints. I told people that I would kill the editor whom I caught handling my negative without white gloves. Paul Hulst and Greg McKibbin, from Kodak in the United States and Australia, respectively, assisted me at the various workshops, and they are going to create some sample lab reports for distribution in these areas. If we can convince people to make some changes in just this area, I feel that we will have accomplished a lot.

"*Dark Mirror*, is an adaptation of a 1948 black-and-white theatrical feature starring Olivia DeHavilland. I shot this entirely on 5294 film, and we did just about everything at practical locations – night interiors and exteriors, day exteriors and interiors; we had scenes where we carried seven stops of latitude. There is one scene early in the movie where two detectives are in the foreground talking about having to release a murder suspect. They are inside a building where my light level was about stop T/5.6. There is a plate glass window behind them, so you can see the suspect walking out and being surrounded by reporters. The light level outside was T/22. And, there is a night scene, where a main character is sitting in a car with some very subtle lighting coming from a 12-watt tube on the dashboard. Across the street there is

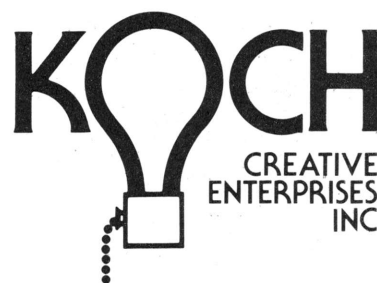
activity in a brightly lit dance studio, where the director wanted the character's face to be recognizable. Now, that's a very long throw. The point is that today there is no limit to what you can do. The fact is you have to be very careful because the fast film sees details in highlight and shadow areas that used to blow-out or block-up.

"I picked *Dark Mirror* because the camera played such a big part in telling the story. For example, there were 10 scenes where Jane Seymour played two parts, 'good' and 'bad' twin sisters. The latter was achieved by creating split screen-opticals, which required careful planning, cooperation and execution involving me, Richard Lang and Joe Westheimer, ASC, who did the optical work. I felt that the split-screen shots were a very good example of how a cinematographer can work with a director to tell a story and create an illusion. It's very easy to destroy an illusion and the entire credibility of a film by doing a split-screen shot where the audience 'sees' the blend line or senses that something is wrong. It doesn't take a lot to kill the illusion. It can happen in the time that it takes to blink your eyes. Audiences will sense that something is wrong if there is the slightest difference in lighting, focus or contrast, even a subtle variation in color, in the two elements making up a split-screen shot.

"A lot of the split-screen work was done in pre-production planning. You obviously do scenes like this by shooting it twice, once with Jane playing one sister, and the next time she plays the other sister. In the old days, we used to tie down the camera and use sandbags to anchor it because if it moved even a fraction of an inch, the perspective changed. Now, we can depend on very stable heads that we use with modern cameras. One thing that you look for in each scene is a darker, or higher contrast area where you can hide the blend line. We used the top of a couch in one scene, where we had a horizontal blend line. Jane 'one' is lying on the couch, and Jane 'two' walks right across the top of the scene behind the couch. Up until that time, our split screens were all verticals. There is one corking scene where one Jane puts her head on the other's

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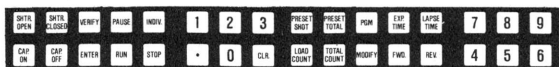
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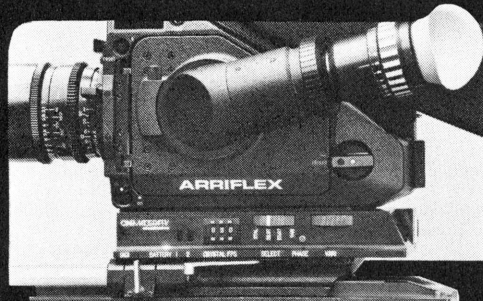
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lap while she is seated on the couch. Of course, what we saw is a quick cut from the split screen to Jane putting her head in a double's lap. Lang always had Jane playing to doubles although you rarely saw them on-camera, except for maybe a quick over-the-shoulder shot. However, there was a different double for each sister so Jane always had an opposite to play to. And, of course, everyone in each of these scenes had to be very careful never to cross the line. On Joe's (Westheimer) part, he made masks for both elements of each scene and then an A and B optical composite on interpositive film, which, in turn, was used to make an internegative. We also provided ABC Television with a low contrast print (Eastman color LC print film 5380) which they used to make a videotape transfer. The print film has around 15 percent less upper range contrast, which makes the shadows more transparent.

"Every movie requires some compromises. I am never totally satisfied. All you can do is take your objectives for a particular script, and make the best possible compromise within the restrictions of your budget, time, equipment and other considerations. I decided to use 5294 film throughout, and I rated it for an EI of 400. That simplified some things since we didn't have to worry about carrying two types of magazines or mixing them up. The film gave me extraordinary exposure latitude, especially in night exteriors or moodily lit interiors. I filtered down for my exteriors. The Panaflex camera is ideal for this since it provides a built-in facility for using neutral density filters which you can use in combination with external filters. On a really bright day exterior, I used an 85N9 filter in the camera. In effect, I was using 5294 film as a 320 EI film in this situation. Then, as the situation changed, I switched to an 85N6 or 85N3, a straight 85 or whatever was necessary. We shot some exteriors in T-32 light, but even with that heavy filtration there was no problem reading the focus with the Panaflex camera. I mainly used bounce light, silks and scrims for my interiors. In one situation, where we had a big plate glass window looking outside into a bright day, I used enough neutral gel to cut four stops. That gave me a blue sky. In another scene staged in the psychiatrist's office, we created a

mood that the director wanted with artificial rain beating against the window, using an unfiltered HMI to provide the right quality of light. As I remember it, we were generally at stop T/5.6, and rarely were we under T/4.5 – the director wanted a clean, sharp look, and we had many scenes where we needed depth of field which would carry foreground and background activities.

"There's a scene near the end of the film in the psychiatrist's office, where one of the twins is making believe that she is the other one – the one that the doctor has fallen in love with. Meanwhile, the other twin is in mortal danger. We canted the camera just enough to let the audience know that something isn't quite right. You have to be very careful if you do something like this. It's something you have to feel. If you do it wrong, the audience thinks you have made a mistake, or you draw attention to the photography. You never want the viewer to be aware of the camera. In another critical scene, earlier in the film, I used an extremely wide-angle 14mm lens in a very tight situation. One of the sisters is in the bathroom, a very small room, getting a pill, which the other sister has switched. I used the wide-angle lens to cover almost the entire room. You could see the counter and sink, and both Jane and her reflection in the mirror. The unusual angle gives the audience a visual hint that something is amiss. Again, you don't want to do too much of this sort of thing or it becomes obvious.

"Most of the film was shot with a 5:1 zoom. That gave us a lot of flexibility for making quick setups and moves. In a couple of instances we used 10:1 where we wanted a comparatively long pull – for example, where two of the police officers get out of a car and they look up and see one of the sisters on a fifth floor balcony. It was an important scene that we had carefully established. We also used a 17mm lens in a couple of instances.

"What I was trying to do at the various seminars was show the directors of photography that they can use the tools of their trade to create light and shadows, images and moods that tell the story. I was also trying to show them how they can collaborate with directors who appreciate their art. One of our primary responsibilities is to

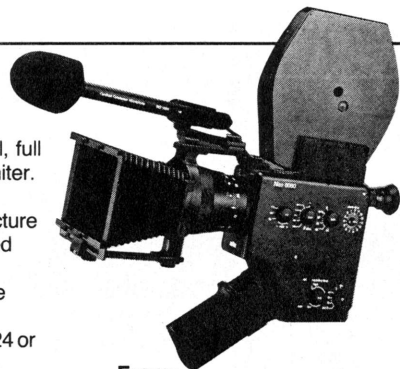
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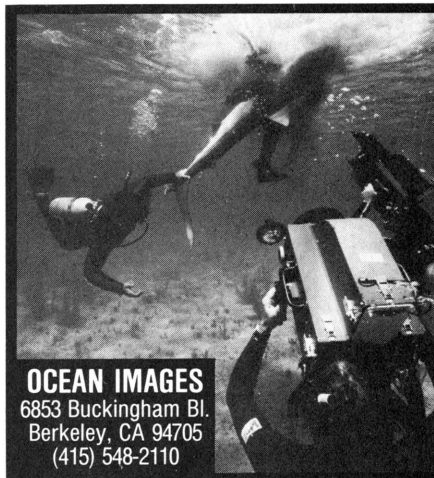
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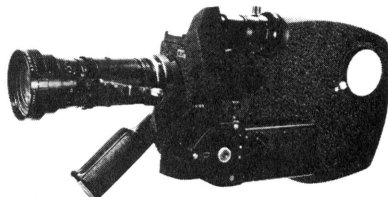
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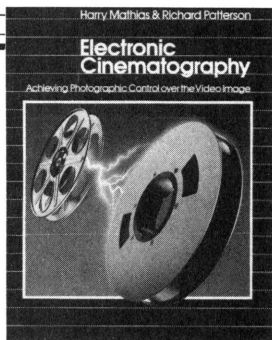


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help bring the picture in on time and on budget. I showed one scene, a day exterior where a detective is speaking to one of the twins who is working in an open flowerstand. She's in the shadows, and he's in the sun. We were losing our light, but we needed to finish the shot. So we shot all of his dialogue first. By the time we shot Jane, it was getting dark, but you could never tell by looking at the film.

"In every country, I met cinematographers who are doing excellent work. I watched Arthur Wong, in Hong Kong, do seven or eight setups using bounce light and silks and tracing paper, and he was thinking and acting like our best domestic cinematographers. I can say the same thing about Taiwan. Marcus Bartley, in Madras, is also doing some excellent work, and I could also single out various other people who are trying very hard to improve the status of the cinematographer. We did some production tests and ran film through two labs in three of the countries, and, in general, I think that there have been improvements during the past three years. However, I believe that it is fair to say that in most of these countries, the director of photography is working under some real handicaps. In many countries, most of the equipment being used is 10 to 40 years old. We wanted 200 footcandles for one of the production tests that we shot, and at one seminar it took three 10 Ks bounced off a white screen to get it. In the United States, I can count on getting the same light from one 10 K. The only place that I saw Panaflex cameras was in Hong Kong, and there weren't a lot of Arri III cameras around either. In India, most production seems to be done with older Arriflex and Mitchell cameras with a great reliance on exterior daylight scenes lit with hard light coming from reflectors. They have some special problems because of severe restrictions on importing modern equipment. They even use a lot of East German film because they can barter for it instead of having to pay in hard dollars. Also, because of the great number of languages, most movies in India are shot without sound, and dialogue is then looped - maybe in 20 to 25 different languages. In most of these countries, you can see the effects of the video cassette recorder. People in Taiwan and Thailand told me that there are fewer theatres because audiences

are either staying home to watch movies on VCRs, or they are going to clubs or restaurants which use this form of display.

"It is obvious that the VCR is here to stay. I think that TV images are going to get bigger and better with the evolution of digital technology, and much better sound is also coming. Sure you lose some of the ambience of the big theatrical screen, or the effect of seeing the movie with an audience which is reacting to it. But there is a great deal of convenience, too. And, we have a generation of people who are now becoming conditioned to looking at movies on television. I believe that there are going to be tremendous opportunities to produce films specifically for the VCR marketplace. Obviously, we need to get very serious about safeguarding our films against piracy if this industry is going to thrive.

About theatrical films Stanley says, "Nothing in our history tells us that the emergence of a new media dictates the end of more mature ones. Television didn't end radio or theatrical filmmaking. It did change them. I think that theatrical filmmaking can survive the onslaught of the VCR if we make movies that people will want to go to see, and if we build and maintain theaters that provide an attractive and comfortable environment. We need clean theaters with modern, wide screens, comfortable seats and good sound. Otherwise, more people are going to decide to stay home and watch movies in the comfort of their living rooms. Some very positive things can come out of this. In Taiwan, for example, I met a number of new, young filmmakers who are meeting the challenge by doing some very good work on very low budgets.

"I hope that we have done some things to stimulate a better dialogue between producers and directors and cinematographers, and also between camera operators and labs. Most of all, I hope that I have inspired, or at least encouraged, some directors of photography to think more about how they can use the tools which are available to them to help shape the look and style of the movies they are shooting."

△

Bob Fisher is a freelance writer based in Encinitas, California.

Skycam on Stage

by Gary Linehan

Two stars shared the spotlight recently during the filming of a new 30-second commercial for Pepsi-Cola: one—a bona fide celebrity—pop superstar Lionel Richie; the other—a rising star, so to speak—Garrett Brown's Skycam, making its commercial debut in the multimillion dollar extravaganza directed by Bob Giraldi.

While the famous singer was the center of attention for the 2,500 extras who took part in the shoot, the main attraction for the production team was the flying camera system, which served as a vital element of the project, capturing a variety of shots ranging from ground level to 65 feet in the air (although Skycam can rise to heights of 200 feet, the producers in this instance did not want to photograph rooftops).

"Every cameraman in Hollywood was peeking in on the thing—it was like old home week," Brown remarked.

Shot on two consecutive nights on the backlot of Universal Studios, the commercial depicts Richie in a New York street concert, performing for the 2,500 extras who filled the street as well as the windows, doorways and fire escapes of the three-story brownstones lining the set. Skycam was kept flying throughout the shoot to obtain unique ambient footage, but the heart of its performance rested in two critical sequences.

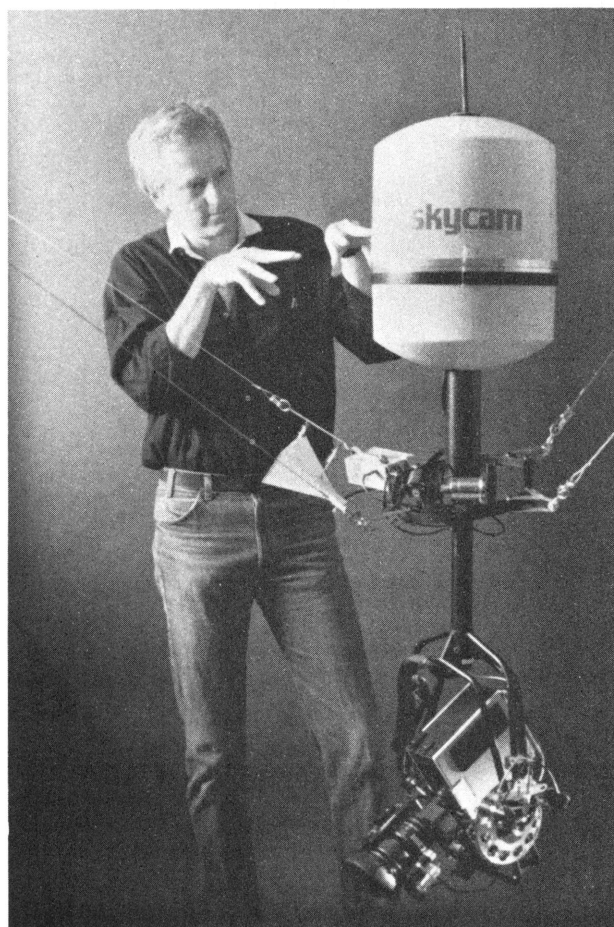
The first (chronologically according to the story line, since the spot was not shot in continuity) involved a number of variations of Richie leaving his dressing room and running about 100 feet through the crowd to the stage in the center of the street, with the Skycam following him tightly the entire distance. "That was fantastic," said Brown. "It looks like a helicopter shot mysteriously down there on the set, right over all those people with no wind

or any of that. It's got great rhythm and its looks neat. It's just an amazing shot—it reminds me of some of the stuff in *Apocalypse Now*.

The second major shot was the end sequence, with Richie sitting alone at the piano at the conclusion of the concert. "That was shot at the end of the first night," recalled Ralph Cohen, executive producer for Giraldi Productions. "All the extras were gone. The camera started out on the street and pulled back at a fairly rapid pace, swung over and revealed Lionel at the piano. Lionel said a line on camera and then the camera just started pulling back, back, back, 100 feet to the end of the street and as high up as possible, while Lionel was walking away from the camera off the stage and down the street. So what you had was an incredibly wide long shot of Lionel walking down the street and it had started out as a tight close-up of him on camera. There is no other way to do that shot and it was very important for us."

Ambient footage included what were the equivalent of dolly shots three stories high, tracking the spectators as they watched from the top story of the brownstones, 360s around Richie and assorted sweeps, twirls, dips and dives over the audience and band. "Some of them were almost hell-diver types of shots," Brown explains. "It would swoop down, light on one section of the crowd that looked interesting, whip pan by that section and pull up and away like a plane taking off from a carrier deck—a fantastic feeling."

Brown describes Skycam as a remotely controlled, computer-assisted aerial camera, held aloft by four thin Kevlar cables (operation is possible using three or even two cables, with proportionately less maneuverability). The cables, which are clipped to a gimbal ring just above the camera, emanate

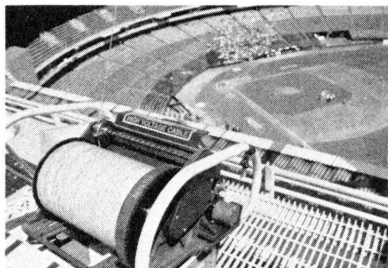
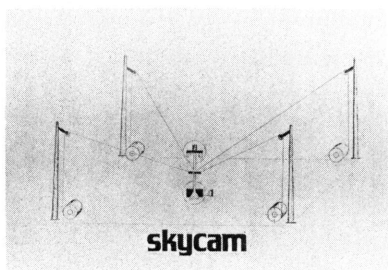
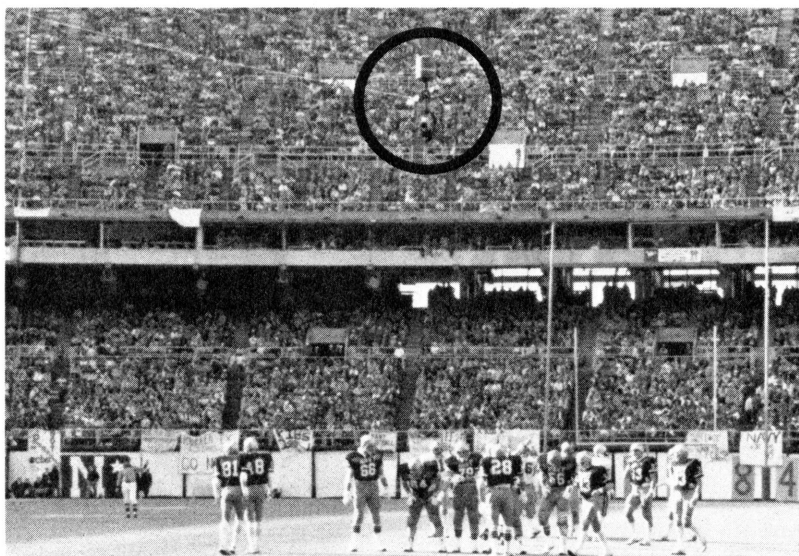


Garrett Brown,
inventor.

from small motorized drums placed at the far corners of the available space. Each cable runs to the camera via a pulley, which is attached at the highest possible point above its motor.

A "pilot" controls the camera's lateral and vertical movements, while a camera operator controls pan, tilt, zoom and focus using either a joystick (primarily used for video applications) or geared-head-style wheels (primarily for film). The operators' console includes monitors for viewing live video or video-assist, as well as a sophisticated graphics CRT to help the

Camera blends with crowd. Center: Satellite technology used for art's sake. Below: Motorized fishing reel is one of four winches used for Skycam.



pilot maneuver effectively in three dimensions.

For the Pepsi commercial, the control console was placed atop a production truck at the northeast corner of the set (the enclosed portion of the truck served as Richie's "dressings room."), with Tass Mickos serving as pilot and Larry McConkey as camera operator.

The pulleys were attached at the west end of the set to existing scaffolding 76 feet high and 57 feet apart. At the east extreme of the street, Allen cable was strung between two telephone poles standing beyond the building line, with the pulleys then secured to the cable 58 feet high and 100 feet apart. The length of the street was 256 feet, resulting in a long, narrow

trapezoidal area (57x256x100) in which to maneuver.

Traditional camera gear used on the production included three Arriflex BL 35mm cameras, a Titan crane and Chapman dolly. The Skycam carried a custom-designed 35mm Ultralite camera by Panavision with matched spherical and anamorphic lenses and a 200-foot magazine. Total weight of the camera, fully loaded, is 7 pounds.

Director of photography for the commercial was John Alcott, who met with the Skycam crew prior to the shoot to discuss its capabilities but allowed the team to remain fairly autonomous once the project was under way. "John provided the T-stops while I selected the lenses and worked out the shots with Tass," McConkey recalled, "then we would just get a response from Giraldi over the headsets saying whether it was good or bad."

Skycam's original function in the project was to capture a single, specific reveal shot, pulling back from the stage to show the huge number of people present at the concert. However, as the commercial underwent numerous changes between its conception and execution several months later, Skycam's role was constantly being revised as well.

"The commercial originally was going to be very much the way it is now with the concert setting," Cohen explained, "but the end of the commercial was going to be a very long dramatic pullback from the stage, showing the immense crowd surrounding Lionel,

and it was going to be done in a beautiful natural location, at the edge of the Grand Canyon or the base of the Teton Mountains or something equally spectacular.

"We had scouted Hawaii, we had scouted Las Vegas and other areas like that, but the shooting schedule kept getting delayed and by the time we were able to shoot, the weather turned very unpredictable for the time of year and didn't allow us to use any of those locations. So we changed the concept and ended up doing it on the Universal backlot as a street concert."

Skycam was brought into the project at Cohen's suggestion after he had viewed the demo tape, which includes concert-type footage. "I had always wanted to use it and thought this was a perfect time to do so," he stated. "We had planned to use the Skycam in that natural location because you could never have gotten that long pullback any other way in real life. Even a helicopter would not have allowed us to do that. We never could have got that close in a helicopter—nice and calm and close—and then pulled back that way. A helicopter is very dangerous over that many people, it's very disturbing to the concert setting and it's just not the right kind of machinery for the job."

Giraldi, who was not aware prior to the shoot that the system had never before been used on a commercial, elaborated on his reactions: "All I can say is that it made a believer out of me. I'm not really a man who likes new gadgetry—not to say that's always right. I'm a man who likes new ideas and new approaches, but gadgets—mechanics—I'm reluctant to use when I'm not really sure about them. But I must tell you, the results of the Skycam were just fantastic."

With his experience in music videos, concerts and other music-related projects, including the celebrated Pepsi commercial featuring the Jackson brothers, Giraldi said he was particularly impressed with Skycam's fluidity. "It's just totally 100 percent right for musicals," he professed. "It's got terrific rhythm and the film it gets almost has music in it as it maneuvers up and down and around. I went with it because I knew it could give me the kind of romantic swooping, twirling, swirling feeling I needed—I did not know it was the first time it was used in a commercial, but

that makes it a little sweeter."

Over 5,000 feet of Eastman 5294 stock feet were shot with the Skycam during the two-day production. Brown was philosophical about the possible outcome: "We shot 3,400 feet the first night and about 2,000 feet the second night, and a commercial occupies approximately 90 feet of film, so no matter how spectacular our footage is, the money is on Richie and obviously he's not going to be cut down."

With the Ultralite's 200-foot magazine, the large amount of footage shot would seem to have involved frequent and complicated reloading, resulting in a disruption of the shooting schedule and lost production time. However, this was not the case, as Brown pointed out. "A 200-foot magazine equals about two minutes and most film shots are less than two minutes, so in general, we are simply limited to shots of that length, although you have unlimited time in video. But you can reload in a minute," he noted. "All the shooting the Skycam does involves no moving of camera gear, no crew schlepping through the crowd, no elaborate runs back and forth with magazines—you just fly it to wherever the system is and drop it right into the loader's lap. It's pretty slick."

Setup time entailed one day of pre-rigging, including a survey of the flying space and installation of the pulleys, and about five hours the next day for final rigging, when the motors were hauled to their respective positions and assembly of the system was completed. Final setup often can be completed in as quickly as one hour, but several delays were encountered on the Universal lot beyond the control of the crew.

"It's not a big deal to set up," Brown explained. "Once you've got the pulleys up, there's not a whole lot more to putting it up. A lot of the time was spent disguising the truck, silly things like that."

Tear-down time after the shoot was slightly over two hours.

The two most difficult situations facing the Skycam crew were the placement of ambient lighting fixtures on stage and the flexibility of the Allen cable supporting the pulleys at the east end of the set, causing the camera to sway more than it would on a solid support.



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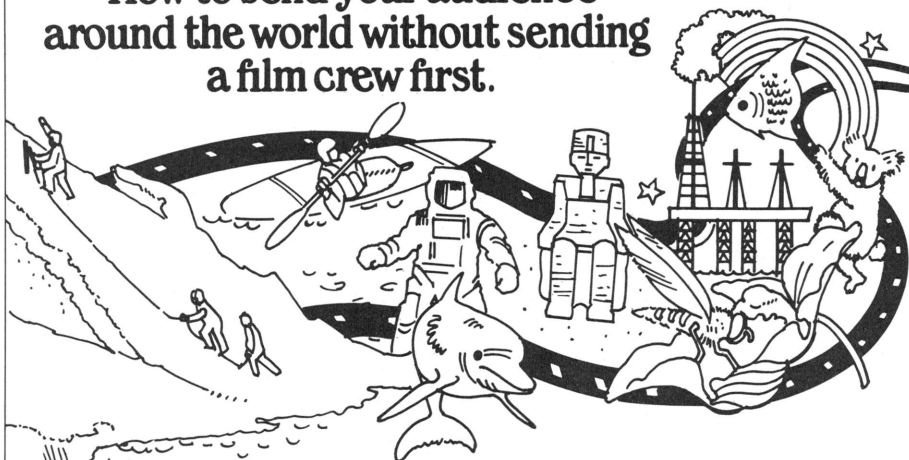
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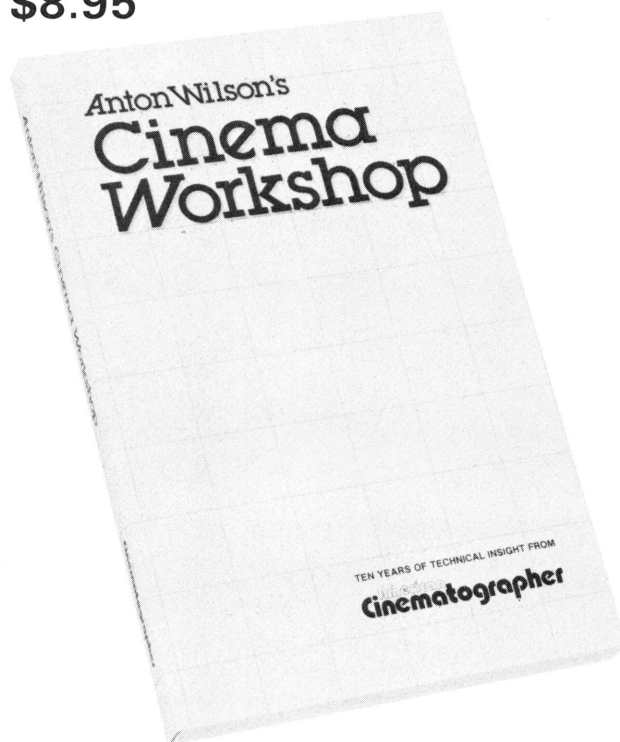
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The former was worked out prior to the shoot, with set designer Ken Davis creating movable lighting stands that could be rolled out of the way when the Skycam was scheduled to fly in that area. Recalled McConkey: "We wanted those colored lights in the frame for ambience, to give it more a three-dimensional feel, but the original configuration on stage knocked out about 80 percent of the Skycam moves. It was difficult to predict exactly where we would be flying, so we came up with the idea of stands that could be rolled in and out as needed."

The swaying motion was minimized by the reactions of the pilot and operator, who learned to decelerate the camera in such a way as to prevent its tendency to swing. "The space was a dreadful place to fly in because of the long narrow quality of it and the fact that the pulleys were up on a wire," Brown stated, "so there was a lot of bounce in the camera—but none of that showed up on screen unless there was a foreground object that gave away that there was a little parallax. Also, Tass and Larry got somewhat better at trying to stop that swingback motion by landing the machine out of period—out of that pendulum period.

"A pendulum has a period of oscillation, and so does any object swinging on something like that," he explained. "For example, if you dangle a weight on a two-foot string below your hand, then move along and just stop suddenly, the weight will swing back and forth. However, if your assignment was to carry that weight along and stop it smoothly, you intuitively would be able to do that by stopping slightly slower than its pendular period and arranging to have your hand end up directly over it.

"If you try it sometime," he continued, "you'll find you have no trouble walking along rapidly and decelerating with no swing at all. That is putting the deceleration outside the pendulum period, the ideal case being 180 degrees out of phase with that. But that is only an acquired skill, and we were delighted to find that we were able to make moves that shouldn't have been possible in that space by flying at the speed appropriate to that guide."

The ability of the operators to adjust quickly to changing situations earned them additional plaudits from

the production team. In the first sequence, for instance, involving the variations of Richie leaving his trailer for the stage, Cohen remarked that the Skycam literally saved hours in setup time, besides the fact that the scene could not have been accomplished with the same effect by any other piece of equipment.

In development for three years, Skycam made its first practical appearance in spring 1984 during the filming of *The Slugger's Wife* by director Hal Ashby and cinematographer Caleb Deschanel, ASC, in Atlanta, Ga. Deschanel, a long-time friend of Brown's, had been involved in the early stages of Skycam's development, helping to test and refine the system.

Skycam was next used in the feature film *Birdy* and made its network television debut in August during a pre-season professional football game. Other projects include the Orange Bowl, rock videos for Cyndi Lauper and Billy Squier, a soccer game and the Army-Navy football game ("We were the Air Force," quipped Brown).

While Skycam's capabilities have been universally lauded by those who have used it, its cost may present an obstacle to lesser budgeted projects. According to Brown, the rental price for crew and equipment is about \$10,000 per shooting day, plus transportation charges, putting the cost at more than \$20,000 for the Pepsi shoot.

The only sign of apprehension that occurred in regard to Skycam was the threat of rain on the second night of shooting, with Brown somewhat nervously checking all available weather forecasts during the afternoon: although Skycam will operate in light rain or snow, strong winds and heavy rain can shut it down. As things turned out, however, the weather held and shooting was completed on schedule.

By all accounts, Skycam was an effective tool making a valuable contribution to a major commercial effort. And although the adulation may appear a bit overzealous at times, no dissenting opinions were put forth. As Cohen stated in a conclusive summary, "It just absolutely worked perfectly. There was not one hitch in it whatsoever." △

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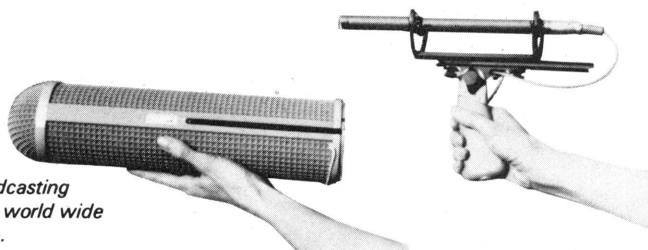
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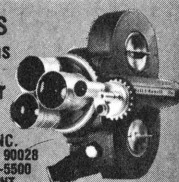
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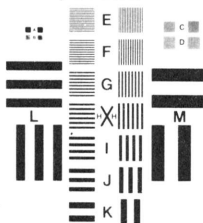
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Calendar

August

August 5-9, 1985

University Film & Video Association

Cinema/Television Conference
Los Angeles
For information: Susanne Regan
Department of Communication Studies
California State University
5151 State University Drive
Los Angeles, CA 90032

August 10-17th

Robert Flaherty Film Seminar

Aurora, New York
For information: International Film Seminars, Inc.
25 W. 43 St., Suite 1118
New York 10036
(212) 764-4703.

August 25-28, 1985

Society of Photographic Scientists & Engineers

Symposium on Stability and Preservation of Photographic Images.
Ottawa, Ontario, Canada
7003 Kilworth Lane
Springfield, VA 22151

September

Sept. 8-14, 1985

Tahoe Film & Video Workshops

Cinematography & Lighting II
Film Directing II
P.O. Box 969
Truckee, CA 95734
(916) 587-4500.

October

Oct. 27-Nov. 1, 1985

SMPTE Technical Conference & Equipment Exhibit

Scarsdale, NY
Los Angeles Convention Center
862 Scarsdale Avenue
Scarsdale, NY 10583
(914) 472-6606

January

Jan. 22-24, 1986

Comparative Literature Symposium

Literature and Movies, a Comparative Approach to Adaptation
Lubbock, Texas
English Department, Texas Tech University
Lubbock, TX 79409
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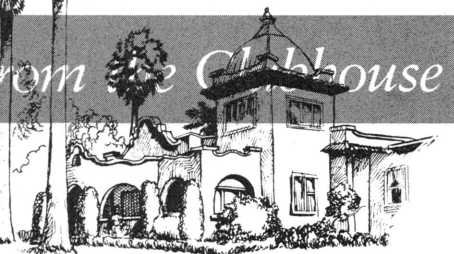
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Newest active members of the A.S.C. are John Bailey and Vincent A. Martinelli.

Bailey, an 18 year veteran of the motion picture industry, has just completed a stint as director of photography on *Silverado* and is working now on *Crossroads* for Columbia Pictures. He and his wife, Carol Littleton, well known film editor, make their home in Los Angeles.

At the beginning of his career, Bailey worked with Nestor Almendros, ASC, on *Days of Heaven*. He has since been DP on *American Gigolo*, *Ordinary People*, *The Big Chill*, *That Championship Season* and was this year honored with an award at the Cannes film festival for artistic achievement on *Mishima*, a Japanese film.

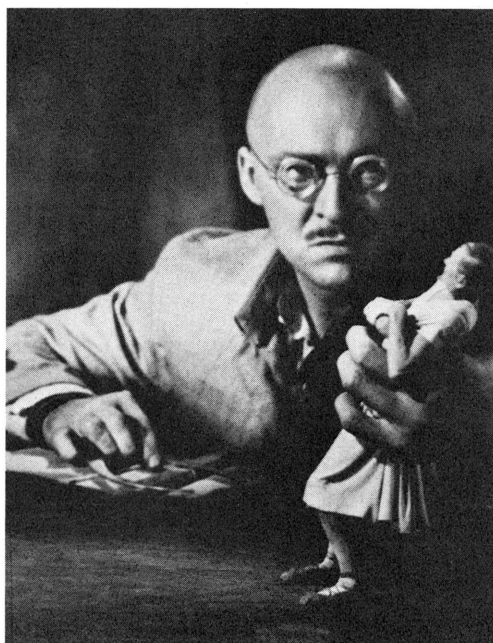
Martinelli, son of retired cinematographer Enzo Martinelli, ASC, is currently director of photography for the much acclaimed *Simon and Simon* television series. He has also been DP on such features as *Mandrake*, *The Chinese Web*, *The Seekers*, *To Race the Wind*, *Dark Night of the Scarecrow* and *Lands End to Lands End*.

He began his career in the film loading room at Republic Studios in October, 1955 and returned to the industry after a stint in the U.S. Navy. He is married and makes his home in Woodland Hills.

• • •

Ed Efron and Charles Powell, of Color Systems Technology, Inc., illuminated members and guests at the June monthly dinner meeting with a demonstration on converting black and white films to color. Participating in the program were Gene Allen, president of the Academy of Motion Picture Arts and Sciences, a noted production designer; and Walter Eggers, veteran color consultant.

This was the fourth program in the State of the Art Series initiated by ASC president Stanley Cortez. The series will continue in October when the monthly dinner meetings are resumed.



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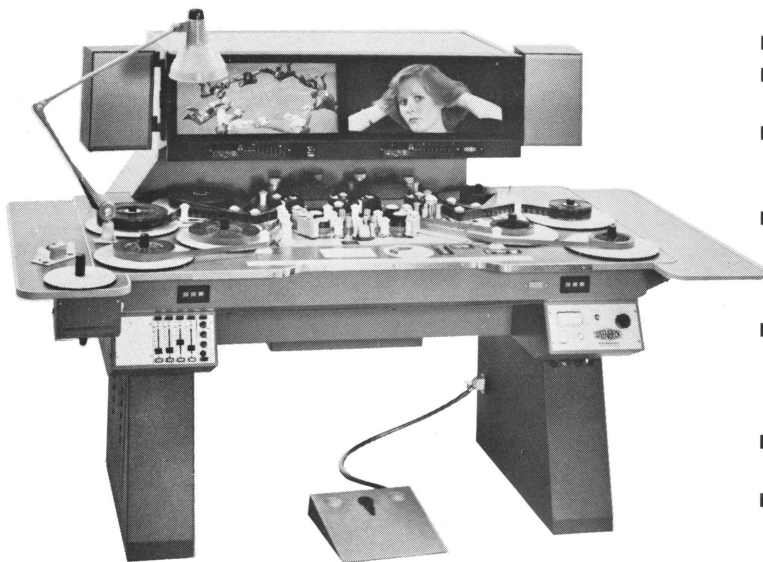
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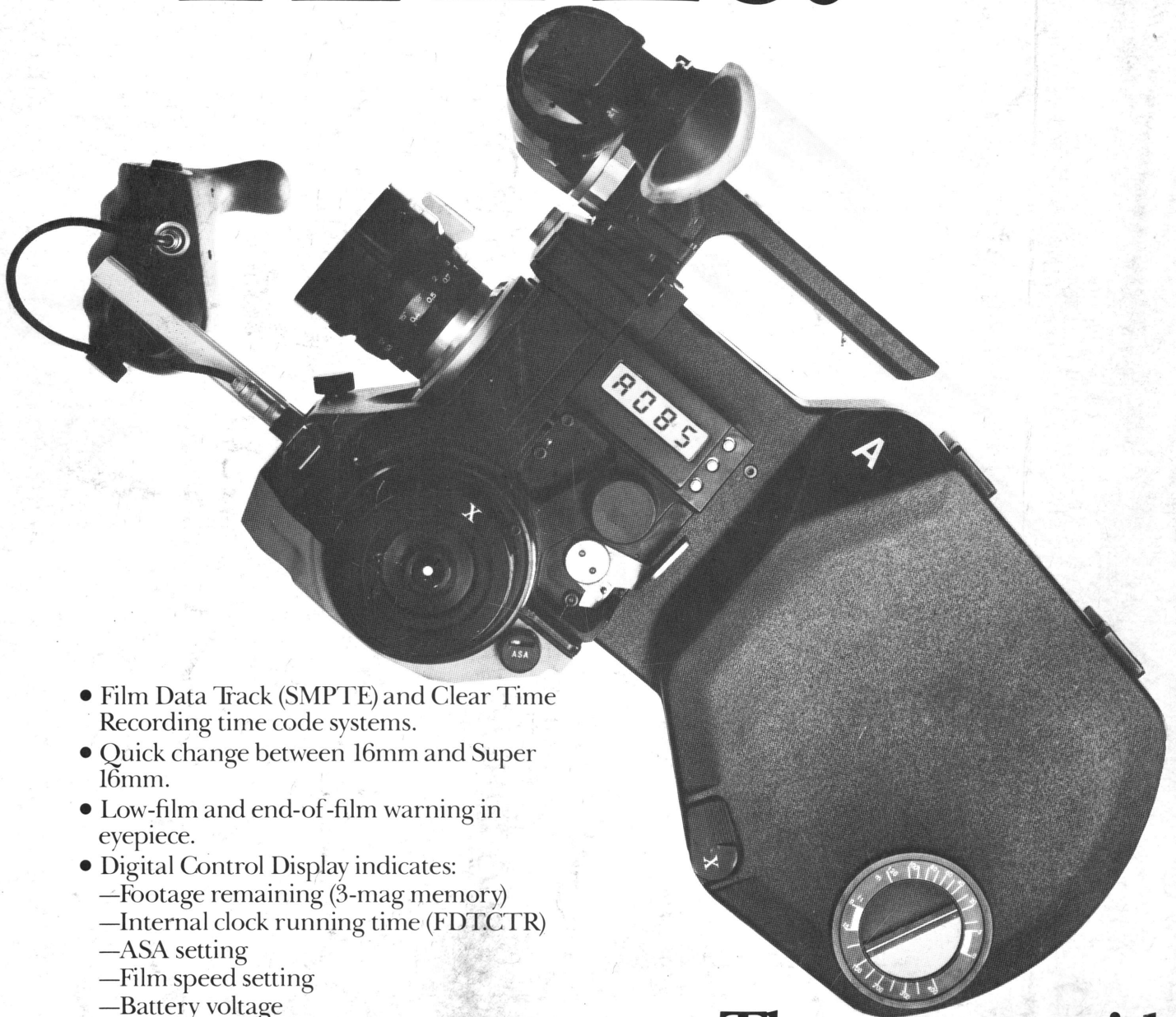
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